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BRANCH I.

ORIGINAL COMMUNICATIONS.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Letter from the Secretary of Eddleſtone Club.

SIR,

IN name of the Eddleſtone Farmer's Club, I beg you'll preſent their compliments to A B C, your correſpondent upon *ploughing matches*. They would be happy to hear his talk at any of their meetings,—where, if he did not receive much intellectual entertainment, he ſhould, at leaſt, be inſured of plenty of plain roaſt or boil, and a *ſkinful* of whiſky punch; with a hearty welcome. The club are by no means diſpoſed to take his raillery in bad part; and are happy to find that, if they ſhould not, mayhap, be *witty in themſelves*, they can, at leaſt, like Falſtaff, *be the cauſe of wit in other men*.

They do not feel themſelves diſpoſed to diſcuſs the point—Whether their advertiſement did or did not give fair ſcope to the bantering compliments of your correſpondent,—being abundantly ſenſible that the public would continue to laugh with Mr A B C, while they would only yawn over their juſtification.

A Duke of Argyle, upon receiving a pelt from a dead cat covered with mud, thrown by a miſchievous boy, while walking in proceſſion, in gala dreſs, to drink his Majeſty's health upon the birth-day, is reported to have ſaid with a ſmile to one of the aſſiſtants, *behold the perquiſites of our office!* And the Club are abundantly ſenſible, that whoever chance to be any how held out to obſervation, muſt quietly lay their account with the

uſual appendages of ſuch a ſituation, and be prepared to ſubmit patiently to unreſerved criticiſm.

Though they by no means pretend to be *the lights of the world* yet, in the conſciouſneſs of the uſefulneſs of ſuch aſſociations, and of the advantages of liberal diſcuſſion—as alſo to convince Mr A B C that they are by no means actuated by *the excluſive monopolizing ſpirit of the Jews*, they have ordained me to ſend to your Magazine, along with this, a few ſpecimens of their diſcuſſions; not, indeed, in any vain conceit that theſe are calculated to diſſeminate much uſeful information, but in the hope that others of your correſpondents may be influenced, by the example, to contribute their views upon theſe or other ſubjects, if you ſhall reckon what is ſent worth inſertion. I remain, with reſpect, Sir,

Your moſt humble ſervant,

The Secretary of Eddleſtone Farmer's Club.

Subſtance of an Eſſay given in to Eddleſtone Club, upon the Endurance of Leaſes.

THE charter of ſecurity to Scots tenantry is founded in the acts of the Scotiſh Parliament 1449 and 1469. Previous to the firſt of theſe enactments, the tenant's tack was only obligatory upon the grantor whilſt he continued to retain the property of the lands, but could be vacated at pleaſure by the next ſucceſſor to the property, whether heir or purchaſer; the tenant being conſidered as having no connexion with the land, but merely through his perſonal connexion with that proprietor who had granted him the tack or leaſe. Previous to the ſecond, the tenant was liable to have his whole ſtock and crop ſwept away, without redreſs, by the landlord's creditors, to anſwer for the landlord's debts.

Indeed, while the tenant or tackſman was little better than menial ſervant to the landlord, and farmed with a ſtock the property of the landlord, theſe grievances (or at leaſt what, in the preſent conſtitution of the matter, would be ſeverely felt as ſuch) could not conſtitute any great hardſhip. The redreſs of theſe enactments, then, mark the period when the tenant had acquired ſtock of his own—whether by pilfering from the landlord's ſtock entruſted to him, or through the ſavings of induſtry, after having been admitted by the landlord to a more liberal participation of the profits, to increaſe that induſtry—and when this claſs were beginning to be able to farm with ſtocks of their own, at a rent certain, and entirely at their own riſk. The neceſſity muſt *then* have

have become apparent, of ſecuring to the tenant the ſtock and fruits upon his farm, againſt all debts but thoſe of his own contracting; as alſo that endurance of poſſeſſion which he had bargained for, to aſſure him of a proper return from thoſe enterprizes in which he might find it reaſonable to embark, in contemplation of that endurance;—in agriculture, as in every other ſubject of induſtry, it being impoſſible that induſtry ſhould exiſt, but under the firm ſecurity that it ſhall reap and enjoy its own fruits. Hence theſe two acts, aided by the liberal interpretation of our Judges, continue to conſtitute the ſole ſecurity by which the Scots tenant holds his tenure of tack.

The preſent ſubject of diſcuſſion is the *endurance of leaſes*; which may be conſidered under two diſtinct points of view. 1ſt, *What period of endurance of leaſe is ſecured, in fact, to the tenant, under protection of the ſtatute* 1449? 2d, *What length of endurance it would be eligible to have ſo ſecured?*

And, *firſt*, of the endurance of leaſes actually ſecured by the operation of the ſtatute 1449; which may furniſh ſubject ſufficient for one night's diſcuſſion.

The Scots acts of Parliament are generally conciſe, but pointedly expreſſive. The words of the act 1449 are as follow:

'Item, it is ordained, for the ſafety and favour of the puir 'people that labouris the ground, that they and all others that 'has taken, or ſall take lands, in time to come, frae lords, and 'has terms and zeirs thereof, that ſuppoſe the lords ſell or 'analzie that land or lands, the takers ſall remaine with their 'tacks, unto the iſchue of their terms, quhais hands that ever 'thay lands come to, for ſiklike mail as they took them for.'

The tenant is thus, in effect, inſtituted into a *real* connexion with the land, whoſoever ſhall come to be proprietor, for the whole term of his tack; nor can he any longer be ejected by an heir or a purchaſer. Nor is any length of endurance ſpecified that ſhall not be exceeded: but, in general, whatever is the actual endurance, (in the language of the ſtatute, *the terms and zeirs thereof*), the tenants are ſecured of poſſeſſion for that whole ſpace, being ordained *to remaine with their tacks, unto the iſchue of their terms*. From the words of the ſtatute, it is evident, that the tack was conſidered only as a temporary, and not as a perpetual tenure of poſſeſſion; for the protection of the ſtatute is extended only to tenures which have an *iſchue of their terms*. Hence it is adopted as a maxim in Scots law, that a tack, to have right to legal ſupport, muſt have an *iſſo* or termination, and that the want of an *iſſo* is a legal irritancy of the tack.

In giving validity to the endurance of the leaſe, in terms of this ſtatute, our judges ſeem to have ſeen reaſon for making a

diſtinction, founded upon *the difference of the origin* of the proprietor's right of property in the ſubject. When a landed proprietor, in full poſſeſſion of the abſolute and unreſtricted property of the ſubject, grants a leaſe, he is underſtood to be, and certainly it is moſt fair and equitable that he ſhould be, held bound to his own fact and deed in its fulleſt extent: of courſe, in ſo far as his intereſt is concerned, every endurance of leaſe is held good againſt the grantor. When, however, the property paſſes from his hands into thoſe of a ſucceſſor, and the queſtion comes to be, *How far this ſucceſſor, as a third party, ſhall be held bound by the previous deeds of his predeceſſor in the property?*—in that caſe a diſtinction ſeems to be made, founded upon the origin of ſaid ſucceſſor's right of property; and a difference of maxim ſeems to be adopted, according to the difference of origin of the ſucceſſor's right.

A proprietor may be ſucceeded in the property of his ſubject, either by his *natural heir*, that is, the one who, in cuſtom, and in law founded upon cuſtom, is expected to ſucceed, juſt as we expect other events to happen in the ordinary accuſtomed courſe of nature: Or he may be ſucceeded by a *ſingular* ſucceſſor, that is, by one whoſe ſucceſſion is a *ſingular thing*, like any event apparently not in nature's ordinary accuſtomed courſe. Theſe *ſingular ſucceſſors* are again divided into *onerous* and *gratuitous*: the *onerous* are thoſe who ſucceed for an onerous cauſe, or valuable conſideration by them given, or, in other words, who have acquired the property by purchaſe and ſale, whether voluntary, or compulſatory, by adjudication for debt: the *gratuitous* are thoſe who ſucceed gratuitouſly, without having given for the property any valuable equivalent, whether by voluntary donation *inter vives*, or by teſtamentary diſpoſition, in which the natural order of ſucceſſion is *cut off*.

There ſeems little reaſon to doubt that a leaſe, *even for perpetuity*, would be held good againſt the grantor; that is to ſay, he might be compelled to allow the tenant to keep poſſeſſion of the land, ſo long as he maintained poſſeſſion of the property of it.

The only queſtion is, then, What extent of endurance of a leaſe would be found good againſt the different ſpecies of theſe ſucceſſors, into whoſe hands the property may come from the grantor; either during his life, by voluntary or compulſatory alienation; or after his death, by natural or inſtituted ſucceſſion?

(1*ſt*,) The *natural heir*, or *heir of line*, or *heir at law*, or, ſimply, *heir*, as he is indiſcriminately deſigned—from his being, commonly, a member of the predeceſſor's family, and, preſumeably, participant in all his councils, may be conſidered as juſtly implicated in all his predeceſſor's proceedings; or rather, perhaps,

perhaps, becauſe he is conceived of the ſame blood, his ſoul and will are alſo conceived as part of the conſtituent of his anceſtor, continued in him by tranſmiſſion; ſo that he poſſeſſes not that complete diſtinct identity, which conſtitutes *a different perſon;* and is therefore conſidered as *a mere continuation of the ſame perſon**. For theſe, or ſimilar reaſons, this ſpecies of heir has ever, in legal conſtruction, been identified with his predeceſſor, and held as his *repreſentative:* in him, ſucceſſion is not conſidered as a change, but as a continuation of poſſeſſion; it is a line extended, but not cut off. A tack, then, is held equally good as to its endurance againſt this ſpecies of ſucceſſor, as againſt the original grantor; with whom he is conſidered as identified, and, of courſe, as bound in all his obligations. In ſhort, no leaſe, of whatever endurance, if at all definite in point of time, ſeems invalid, in regard to the *grantor* and his *heirs* of this deſcription. For, though (according to Bell, in his treatiſe on leaſes) a tack *for perpetuity* was found invalid (in 1615) againſt the repreſentatives of the grantor—no doubt, becauſe it wanted the eſſential requiſite of an *iſh*, to entitle it to protection of the ſtatute 1449; yet, in 1617, a deciſion is noticed by him, ſuſtaining a leaſe againſt the grantor, and his heirs or repreſentatives, though of an endurance *ſo long as graſs groweth up, and water runneth down*—no doubt, becauſe, though, eventually, it might prove ſomewhat long, yet it could not be fairly conſtrued into an abſolute perpetuity; as it might probably have its *iſh* againſt the time of the general conflagration at the day of judgment, and the introduction of new heavens and a new earth, with a probable reorganization of the laws of nature.

But, although the Scots tenant ſeems thus to poſſeſs abundance of ſecurity, as to the endurance of his leaſe, againſt the grantor and his natural heirs, ſo long as they retain the property of the lands, he can have no ſecurity of *their* retaining that property; which they may voluntarily alienate, gratuitouſly, or by ſale; or which may be compulſorily taken from them, by adjudication for their debts.

A proprietor, in perfect hability of uſing and diſpoſing of his property as he pleaſes, cannot, by any voluntary gratuitous diſpoſition of his own, invalidate a leaſe which he has granted himſelf.—

* Law reaſonings have often been conſidered as the fair game of ridicule. It ought, however, never to be forgotten, that the buſineſs of the world cannot ſtand ſtill; and that there muſt be ſome determining motive or reaſon, to lead men to adopt decided maxims as to meaſures, rather than have no maxim or rule—let them be founded on analogies the moſt ſlight or whimſical.

ſelf.—Accordingly, even a deed of entail, executed in all its formalities, could not, by any of its clauſes, affect a leaſe at the inſtance of the heir of entail, which had been granted by the entailer in ſuch terms as he was in hability to have granted—no more than it could defend the property againſt ſuch debts as the entailer might chooſe to contract, even though contracted ſubſequent to the making of the entail, and its publication upon the record. The clauſes of the entail can lay no reſtriction upon the validity of the other deeds of the entailer himſelf; they can only reſtrict the powers of thoſe *whoſe right of the property is derived from the entail.* But this ſubject will fall to be afterwards conſidered.

A leaſe of almoſt any endurance ſeems good againſt the grantor and his natural heir; and, for the ſame reaſon, againſt all the natural heirs of that heir, and his natural heirs, &c. *ad infinitum.*

(*2dly,*) Let us conſider its validity againſt *ſingular ſucceſſors;*—theſe are, *onerous* and *gratuitous* ſucceſſors, as above explained.

Firſt, of *onerous ſingular ſucceſſors.* Theſe are either ſuch as have purchaſed the property from the grantor of the leaſe, at a voluntary ſale; or who have evicted the property, by obtaining a legal adjudication of it in their favour to pay debts that they had againſt it.

In regard to all ſuch ſucceſſors, who have entered upon poſſeſſion of the property, for a fair equivalent given, either in fair purchaſe price, at a voluntary ſale, or money equivalent to its value lent upon it, and for which it is adjudged, it ſeems to have been a maxim adopted by our Judges, that ſuch ſucceeding proprietors (in conſideration of their having given a fair and full equivalent) ſhould be admitted to as free, full and unincumbered uſe of the property, as it was poſſible to convey to them, through the ſtricteſt interpretation of any exiſting pledge upon the lands, previouſly impoſed by the preceding proprietor; more particularly, of pledges ſuch as leaſes, which are not entered upon record in the public regiſter of landed property; which may therefore exiſt without the knowledge of the purchaſer or heritable creditor, and which, if allowed equal force with ſuch pledges as are publicly recorded, would weaken the faith of the record, as an evidence of ſecurity, and greatly impede the free commerce of land, either in the way of purchaſe and ſale, or as a ſecurity upon which to lend money.

This difficulty might no doubt be readily obviated, by a county regiſter for tacks of endurance beyond common, and an act of parliament rendering ſuch tacks invalid, unleſs they are there recorded; and it ſeems odd that ſuch a regulation has never been applied for. But, indeed, as the grantor of the leaſe is perſonally

ally liable in damages to the tenant who ſhould be *euſted* from the leaſe which he had granted, it is moſt probable that, in a *voluntary ſale* of his lands, he will take care to have all his leaſes ſecured to the tenants by the articles of ſale. The caſe could not, however, be the ſame, on ſuppoſition of a *compulſatory ſale* at the inſtance of creditors for debt.

If the authority of Bell (*Treatiſe on Leaſes*) is an authority to which we ought implicitly to bow the head, it would ſeem that there is no reaſon to conclude, from any deciſions yet given by our Courts, that a tack would be ſuſtained againſt an onerous ſingular ſucceſſor, if its endurance exceeded that of *an ordinary leaſe*, granted in *the ordinary courſe of adminiſtration*, which *ordinary endurance* (but upon what principle does not appear) he holds to be underſtood *of nineteen years* *.

From the original depreſſion of tenantry in feudal times, their intereſt ſeems to have been little regarded. According to the maxims of Scots law, therefore, the tenure of the tenant, inſtead of deſerving protection, has been conſidered as a clog and incumbrance upon the exerciſe of the nobler right of property in

* Bell accordingly endeavours to invalidate the authority of the deciſions hitherto relied on as a ſecurity for tacks of very long endurance, by ſhowing that none of theſe deciſions went to the eſtabliſhment of the general principle, but proceeded upon ſpecialties in the caſe.

Thus, in the deciſion of the Houſe of Peers, (the King's Advocate, coming by forfeiture in place of Lovat, *againſt* Belladrum), he alleges, Belladrum's leaſe of 1140 years was ſuſtained, becauſe, though Lovat might, in one view, be conſidered as an onerous ſingular ſucceſſor, in another view, he might be conſidered as natural heir and repreſentative of the grantor of the leaſe.

In the deciſion of our Court of Seſſion, conſequent upon the laſt, in 1760, (caſe of Irvine *againſt* Knox), a leaſe of 1260 years was ſuſtained. Bell takes no notice of this deciſion in the proper place; Findlater adverts to it in Note B of his Agricultural Survey of Peebleſhire.

In 1763, (caſe of Wight *againſt* Hopetoun), a tack renewable for ever, from 19 years to 19 years, upon a ſpecified fine or graſſum at each renewal, was ſuſtained againſt Hopetoun, although an onerous ſingular ſucceſſor by purchaſe. But it would appear that Hopetoun was debarred from challenging the title of Wight the tenant, becauſe, in his own titles, viz. the diſpoſition from Ormieſton the ſeller of the property, Ormieſton had taken him expreſsly bound to implement his warrandice of Wight's tack; and, as this clauſe muſt ever appear in the titles of each heir or purchaſer, (which to them muſt be equivalent to a regiſtration), they might equally be debarred from challenging Wight's title.

land: it has been tolerated, rather than protected, as a neceſſary evil, but ſtill an evil.

The abſurdity muſt certainly have very ſoon occurred to our barbarous anceſtors (however little accuſtomed to reflection), of expecting that induſtry would ever be exerted where it had no proſpect of reaping its proper fruits. Accordingly, as war and plunder began to be relinquiſhed for the more certain mode of ſubſiſtence derived from cultivation; when tenants had ariſen to the poſſeſſion of ſtock, making them deſirous of cultivating for themſelves, at a rent certain, and at their own riſk; and when the ſuperiority of this mode of cultivation was diſcerned, over that of the proprietor cultivating with his own ſtock, and by his own ſlaves or ſervants, admitted more or leſs into partnerſhip: the neceſſity muſt have appeared of granting ſecurity of a certain endurance of poſſeſſion, to induce the tenant to beſtow the proper labour and outlay of ſtock, in the aſſurance of having time to reap the proper returns of ſuch induſtry and outlay. And hence, no doubt, the famous act of parliament 1449. But when we conſider the traditionary jealouſy againſt allowing this temporary tenure to rival or interfere with the full exerciſe of property, which in thoſe days muſt have operated with at leaſt equal force as now, the maxim muſt equally have *then* prevailed, of conſidering tacks as unentitled to legal ſupport, which exceeded in length the ordinary endurance: And when we conſider the neceſſary ſhort-ſightedneſs of the tenantry then exiſting, with reſpect to improvements, as juſt emerging from beggary, dependance and contempt, together with the inhability of military barbarian proprietors to conceive by reflection what they had not perceived in experience; we may certainly conclude, that the ordinary endurance of a leaſe was then very ſhort; and that probably, at the time of the enactment, no leaſe would have been conſidered as entitled to the protection of ſtatute 1449, (however broad in its terms), that exceeded the old Roman legal limits of five years, or the French one, ſo late as 1775, of nine.

Accordingly, our earlieſt lawyers conſider a leaſe of ten years as a leaſe *longi vel longiſſimi temporis*, and as falling without the protection of ſtatute 1449; from its not being of that temporary nature of the rights meant to be protected by that ſtatute; and from its encroaching upon the ſacred precincts of the nobler right of property, in approaching to the nature of rights of perpetuity. In proportion to the enlargement of the views of cultivators, the total bar to every improvement of material conſequence, under ſuch impermanent tenures of ſecurity, muſt, in common ſenſe, have enforced the extenſion of the legal term of leaſe, in deſpite of the authority of theſe early lawyers, who certainly could aſſign no

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ſort of reaſon for their opinion of the abſolutely neceſſary extenſion (though wiſhed for circumſcription) of the duration of leaſes, but merely their own views of what was indiſpenſable to encourage induſtrious agricultural cultivation—a ſubject of which country gentlemen and farmers were competent to judge, but, in regard to which, cloſet ſtudents were unentitled to hold an opinion. Common ſenſe would appear to have forced its own way, in overturning the crazy obſtacle of ſuch unwarrantedly aſſumed, or imputed authority. The intermediate ſteps of the progreſs are probably incapable of being diſtinctly traced: but, in two centuries from the enactment of this famous ſtatute, we find, the celebrated Erſkine had protracted the term of *longi vel longiſſimi temporis* endurance of the leaſe, from the original ten, to the ſpace of nineteen years. Nor does there exiſt the ſmalleſt ſhadow of a reaſon why views of utility may not, juſt as unceremoniouſly, ſet aſide the authority of Erſkine upon the point, as he has ſet aſide the *quondam* authority of Brancton. As yet, (according to Bell, before mentioned) no deciſion has appeared to warrant the concluſion that a tack will be ſuſtained, againſt an onerous ſingular ſucceſſor, which exceeds *the ordinary duration of nineteen years*: but, aſſuredly, as little does any deciſion poſitively militate againſt ſuch a concluſion. All that is decerned by ſtatute is, merely, *that the tack ſhall have an iſſ*: All that is decided by the authority of lawyers, is, the general maxim, obvious to common ſenſe, *that a nominally temporary tenure may, from its exceſſive duration compared to the brevity of human life, prove, to all human purpoſes, equivalent to a perpetuity*: But as to the preciſe period of endurance, which ſhall thus aſſimilate a tack to a perpetual right, it is a point which hath ever been, and muſt neceſſarily be ambulatory, to be judged of, and fixed from time to time, like the intereſt of money, according to the views of utility and conſonant cuſtoms then prevalent. And there can be no reaſon why our judges ſhould tie their judgement to the authority of Erſkine upon the point, any more than why they ſhould revert to the more antique authorities of Brancton and of Craig.

Tacks, in this country, have frequently been granted for twenty-one, twenty-five, thirty years, *as acts of ordinary adminiſtration*; without either an intention to get advantage of a ſucceeding heir of entail, or any ſpecific obligation upon the tenant to any one improvement, beyond that obligation of ſelf-intereſt, originating in the duration itſelf, of being liberal in the outlay of capital, and induſtrious in rapid improvement, from the proſpect of ſufficiently long enjoyment of the joint fruits of both. In the agricultural report of Berwickſhire, one of the pattern counties of Scotland, drawn up by a Scots lawyer, it is acknowledged, that the primary improvements of Scotland, which

which there took place, originated in tacks of long endurance, chiefly of fifty-ſeven years; nor is notice taken of the ſmalleſt ſpecific obligation to improvement laid upon the tenant, more than that ſimple but moſt efficient *ſtimulus* of ſuch long ſecurity: Nor does the author, meanwhile, depart from the feudal-ridden lawyer character; for though neceſſitated to acknowledge the utility of long leaſes, he ſtrongly recommends ſhort ones *as ſufficient*; he alſo ſtrongly inculcates the propriety of upholding the landlord's feudal right of *delectus perſonæ* in his tenant, by rendering the leaſe *unaſſignable* and *untransferable*: a meaſure, which (in conformity with entails of landed property) conſtitutes one of the moſt ingenious devices that can be contrived for obliterating, in the tenant, all deſire of fixing his own capital in the ſoil, and for effectually depriving him of all credit to obtain other capitals to be ſo fixed. * Who, indeed, but a madman, would launch out capital into a continual riſk of forfeiture? eſpecially when common ſenſe has ever refuſed admittance to ſuch abſurd maxims, in regard to all other profeſſional occupations requiring the induſtrious outlay of capital, to which he might betake himſelf at pleaſure.

The queſtion of endurance, it would ſeem, has not (as to onerous ſingular ſucceſſors) yet met with a deciſion founded upon the pure unmixed principle. As, however, the term of endurance has already received extenſion beyond the primary law conſtruction; as the enlargement of views of agricultural improvement implies more and more the expenſive outlay of capital, with more diſtant proſpect of return; as, in fact, the moſt effectual cultivation in Scotland has confeſſedly originated in leaſes of endurance proportionate to ſuch expence and proſpect; as (if *one general maxim* is to be laid down, which is to be equally applied to all caſes) it is better, that a term ſhould be choſen, which may prove ſuperfluouſly long for diſtricts already improved, than that one ſhould be fixed, ſo ſhort as to debar all improvement of the vaſt tracts of the country ſtill remaining in the ſtate of nature: For theſe reaſons, when the queſtion ſhall be agitated, it ſeems extremely probable that our judges would be no more diſpoſed to confine themſelves to the nineteen years term of Erſkine, than to revert to the obſolete ten years term of Craig and Brancton.

It is indeed rather ſurpriſing, that a point of ſuch importance ſhould be left ambulatory, to be regulated by the diſcretion of judges. The wiſdom of the legiſlature is daily exerciſed in deviſing

* See this ſubject illuſtrated at length in Findlater's Agricultural Survey of Peebleſhire, Note D.

viſing laws for the ſecurity of property, even when launched out in ſuch trifling inveſtiture as that of the porter mugs of London. How then has it happened, that, in regard to capital launched out by the immediate cultivators of the ſoil, to which all the other moveable capital of the Empire is but as a drop in the bucket, we ſhould, in Scotland, have had no law ſince the acts 1449, and 1469, excepting the law of entail in 1685; which, inſtead of enlarging, tends further to cramp and fetter the ſecurity of launching out money upon agricultural enterpriſe of long proſpect; and that of 1770, the tenth of his preſent Majeſty, which is not ſo generally applicable as to be much acted upon?

Bell *(Treatiſe on Leaſes)* conſiders, that the queſtion of endurance can rarely fall to be tried with an onerous ſingular ſucceſſor. Indeed, in a voluntary ſale, it is preſumeable that the ſeller will take the purchaſer bound, in the articles of ſale, to all his obligations. It does not appear that this could be effected in a compulſory ſale for debt: It may occur then in the ratio of the chances of the ſuperior frequencies of voluntary or of compulſory ſales. And, if it were to occur, an opinion ſeems to be entertained, that the deciſion might proceed upon the analogy of precedents in caſes determined, where the queſtion hath occurred betwixt the tenant and the other ſpecies of ſingular ſucceſſors, that is, the *gratuitous*. Which leads me to conſider,

Secondly, The *gratuitous ſingular ſucceſſor*. Theſe are deſigned, *ſingular*, as not ſucceeding, like heirs, *according to the order of nature*, but by *artificial deſtination*, which has cut off the natural order of ſucceſſion; whence ſuch deſtination is called tailzie, from *tailler* to cut. They are *gratuitous*, as ſucceeding *meræ gratiæ*, without having paid any equivalent.

A proprietor cannot, by any voluntary deed of his own, vacate any obligation which he himſelf hath contracted. It ſeems clear, therefore, that he cannot, either by voluntary donation of his property *inter vivos*, or by teſtamentary diſpoſition of it, communicate, to the gratuitous ſucceſſor he has thus appointed, any right to challenge his tack which he has granted. A leaſe would therefore appear to be equally valid againſt the tailzier or deſtinator, as grantor, and his heirs of tailzie, as againſt the grantor and his natural heirs; no ſtretch would be made, to convey the unincumbered uſe of property to the *artificial*, which is refuſed to the *natural* heir.

The caſe of gratuitous ſingular ſucceſſion, by *donatio inter vivos*, is a thing of very rare occurrence, and needs not to be conſidered: We may conſider ſingular ſucceſſors as univerſally conſtituted by teſtamentary deſtination or tailzie.

That the induſtry requiſite to acquire property, or to render it more

more valuable, may be excited, it is neceſſary that the full and free enjoyment of that property ſhould be ſecured. That the views of induſtry may not limit themſelves to the acquiſition merely of what may be enjoyed and diſſipated in a ſingle lifetime, the legal ſucceſſion of heirs, the preſumable objects of affection, has been introduced; and for the ſame purpoſe has the effect of teſtamentary deſtination been ultimately ſupported, to various extents, more unlimited, or more circumſcribed. There certainly are, however, proper limits, within which this ultimate power ought to be confined. In England, we underſtand the power of tailzie is confined to the extent to which the tailzier *can ſee*; that is, he can deſtine only to ſuch perſons as are in exiſtence at the time; which might ſatisfy any rational affection: But, in Scotland, it is extended as far as the tailzier can *conceive or imagine*: And to ſecure effect to ſuch whimſical deſtination, the whole intermediate ſucceſſors, till the laſt in the deſtination, are incapacitated (to uſe the words of the ſtatute 1685) '*to ſell, analzie, or diſpone the* '*ſaids lands, or any part thereof, or to contract debt, or to do any* '*other deed whereby the ſamen may be apprized, adjudged, or evict-* '*ed from the other ſubſtitutes in the tailzie, or the ſucceſſion fruſ-* '*trate or interrupted: declaring all ſuch deeds to be in themſelves* '*null and void, and that the next heir of tailzie may, immediately* '*upon contravention, purſue declarator thereof, and ſerve himſelf* '*heir to him who died laſt infeft in the fee, and did not contra-* '*vene, without neceſſity anywiſe to repreſent the contravener.*' Thus the whole ſucceſſion of proprietors (if ſuch they can be called) upon an entailed eſtate, are reduced, by the ridiculous effect given to the will of one ſingle fool, to be mere uſufructuaries and liferenters, for as many generations as he ſhall think it proper to dream of and to ſpecify.

The abſurdity of thus rendering landed property unalienable and unaffectable by debt; thus depriving the induſtrious of the excitement of all proſpect of purchaſing a land eſtate; thus rendering the exiſting proprietors of land as neceſſarily barren of improvement as mere liferenters; thus deſtroying the proper check of paternal authority, in rendering the ſon who ſucceeds by the entail independent of the father, and incapacitating the latter from rewarding different degrees of filial duty, by proportionate ſhares of the family inheritance: Theſe obvious inconveniences have ever procured for this noxious ſtatute a *ſtrictiſſimi juris* interpretation. In deeds of tailzie claiming its protection, nothing is allowed to be implied, but what is explicitly expreſſed: The *prohibition* to alienate or contract debt, &c. is of no avail to prevent either, without the *irritant* clauſe, rendering ſuch deeds null and void, as alſo the *reſolutive* clauſe (which is the only enforcing ſanction)

ſanction) reſolving the doer's title, and making him forfeit the property to the next heir of entail. Erſkine expreſsly ſays, that a prohibition to *alienate* does not infer a prohibition to *contract debt*, and that a prohibition to *contract debt* does not infer a prohibition to *alienate*: and a variety of deciſions have occurred, ſince the days of Erſkine, moſt ſtrongly corroborative of this principle of ſtricteſt interpretation. As in 1786 (Stewart againſt Hume), though the entail expreſsly prohibited to *diſpone, or ſell, or contract debt, or grant any deed whereby the land might be evicted*; yet the heir of entail was found juſtified in *altering the order of ſucceſſion in the entail*, in favour of his own daughter; becauſe the entail did not, in expreſs words, prohibit *the alteration of the courſe of ſucceſſion* pointed out in it: And in like manner (Borthwic againſt Borthwic) the Houſe of Peers found, that the prohibition of the entail againſt *contracting debt* precluded not the right of burthening the property with a proviſion for younger children; becauſe *debt*, ſtrictly ſpeaking, implies an *onerous title* in the creditor; but a proviſion to children gives them only a *gratuitous title* to ſuch proviſion.

In regard to ſuch gratuitous ſingular ſucceſſors, whoſe rights are thus ſtrictly interpreted, it is doubtful how far, in regard to leaſes of long endurance, queſtions decided againſt them would be held as a precedent in queſtions againſt onerous ſingular ſucceſſors. They are neither *identified with the perſon* of the preceding proprietor, nor, of courſe, bound in his obligations like the natural heir, though they reſemble him in ſucceeding by a gratuitous title:—Nor do they ſeem entitled to the ſame favourable interpretation as onerous ſingular ſucceſſors; becauſe, though they reſemble them *in ſucceeding out of the natural courſe*, yet they have not, like them, *given an equivalent for the property*:—They ſeem, in ſhort, to be of a mongrel ſpecies. Were a precedent to be drawn from deciſions againſt this ſpecies of ſucceſſor, to regulate deciſion in queſtions of endurance of leaſe againſt onerous ſingular ſucceſſors, a great latitude of leaſe would appear legal: For ſo late as 1779 (Leſlie againſt Orme), a leaſe of ſeventy-ſix years was ſuſtained, in an entail unfettered as to the duration of leaſes, againſt the ſucceeding heir of entail.

The act 1685, upon which the power of entailing ſtands, does not communicate, *expreſsly*, any power to the entailer to regulate the duration of leaſes (unleſs this was to be *implicated* from its general expreſſion, '*that it ſhall be lawful to his Majeſty's ſubjects* '*to tailzie their lands and eſtates, and to ſubſtitute heirs in their tail-*' *zies, with ſuch proviſions as they ſhall think fit*;'—an implication that would ſeem diametrically oppoſite to *ſtrictiſſimi juris* interpretation); yet, in practice, our judges ſeem rather inclined to ſuſtain

ſuch

ſuch clauſes in entails: And nobody would readily riſk to take a leaſe of longer duration than that preſcribed in the entail, unleſs in the faith of ſuch leaſe being ſuſtained, upon appeal, by the Houſe of Peers. Where there is no clauſe in the entail limiting the duration of leaſe, the leaſe muſt ſtand upon the protection of the act 1446. But whether a deciſion would be given, which would form a precedent in queſtions that might occur, as to endurance, with onerous ſingular ſucceſſors—or which would ſolely apply to this individual ſpecies of gratuitous ſingular ſucceſſors, liable to the *ſtricti[illegible]ſſimi juris* interpretation, ſeems problematical. A caſe has occurred (Queenſberry againſt Elcho) where leaſes of ninety-ſeven years are propoſed to be granted by the poſſeſſing heir of entail; the entail containing no expreſſed clauſe of reſtriction as to length of leaſe, unleſs a relaxing clauſe in it in theſe words, (' *notwithſtanding of the above irritant and reſolutive clauſes,* ' *it ſhall be lawful for the heirs of tailzie to let leaſes during their own* ' *lifetime or that of the receivers* '), ſhould, *by implication*, be made to infer an intended reſtriction to ſomething leſs than what is allowed in the relaxation;—which would imply a latitude of interpretation in favour of heirs of entail, againſt leaſes, that (as appears) has not hitherto been allowed them, in the fore-quoted deciſions, againſt acts of their predeceſſor much more materially affecting the eſtate.

Upon the whole, it would ſeem, 1*mo*, That almoſt any length of endurance of leaſe, if only it hath an *iſh* or expiry, will be ſuſtained againſt a proprietor unfettered by entail as grantor, and his heirs, ſo long as they retain the property of the land: 2*do*, That a leaſe of nineteen years will, *certainly*, and a much longer one will, *probably*, be ſuſtained againſt an onerous ſingular ſucceſſor: 3*tio*, That againſt a gratuitous ſingular ſucceſſor, or heir of entail, (whoſe gratuitous title is more ſtrictly interpreted), any length of leaſe will be ſuſtained (if the length is not expreſsly reſtricted in the words of the entail) that does not, by approximating it to a perpetual right, remove it from the protection of the ſtatute 1449, and bring it under the prohibitory clauſe of the entail *de non alienando*. In the caſe now agitating (Queenſberry againſt Elcho), the Lords have delivered their opinions *ſeriatim*, and are unanimous, that a ninety-ſeven years leaſe is, in this reſpect, inadmiſſible: They ſeem, however, to think this a caſe proper for ſetting at reſt, by a general deciſion, the queſtion of the length of endurance which a leaſe may poſſeſs, without putting it out of protection of act 1449: And they have accordingly appointed a ſolemn hearing of Counſel.

But, whether the deciſion that ſhall be given in this caſe, will apply to queſtions of endurance againſt onerous ſingular ſucceſſors, appears to me doubtful, from the failure of parallelism in the proprietor's

prietor's titles. The title of the gratuitous ſucceſſor is more ſtrictly interpreted: And, further, in his caſe, (as, from the entail, his lands are unalienable and locked up from commerce), the invalidation of the faith of the regiſter of landed property does not intervene, to prevent a liberal ſtretch in favour of leaſes being made againſt him.

I need hardly mention the act 10th of his preſent Majeſty, giving a power of letting thirty-one years leaſes upon entailed eſtates. The conditions of improvement impoſed on the tenant, if he embraces the benefit of the act, are ſo undiſtinguiſhing, as to be moſt frequently inapplicable, and of courſe ineligible.

I ſhall conclude my remarks with juſt hinting to tenants the propriety of their attending to the title the proprietor hath to the lands, before they take leaſes, and incur the expence of outlay, at the riſk of being afterwards ejected. I would particularly direct their attention to that particular caſe where they might be in moſt danger of inadvertence; and that is the caſe of the *heir-apparent*—deſigned *apparent*, becauſe univerſally known to be the natural ſucceſſor to the property—but conſidered, in law, as no more than mere *apparent* proprietor, till he has completed a *real* title to it, by the inveſtiture at infeofment.

Suppoſing the *apparent heir* to have entered upon poſſeſſion, and to have granted a leaſe before being infeofed; his ſubſequent infeofment will, without queſtion, confer validity upon the leaſe: But, ſuppoſing that, after granting the leaſe, he dies without having completed his titles by infeofment; in that caſe the next in ſucceſſion does not enter as heir to him; but, *paſſing by him*, he enters himſelf heir to the immediate predeceſſor; and as in no ſhape repreſenting the *apparent heir*, the heir *paſſing by* (as he is deſigned) is not bound in any of his obligations, and could therefore ſet aſide the leaſe. This maxim, as it would appear, of common law, has been modulated by act 1695; by which, if the *heir apparent* has been three years in poſſeſſion of the property, though dying uninfeofed, the *heir paſſing by* is liable in his *debts and deeds*, to the full value of the eſtate. And although Kilkerran expreſſes doubts, whether leaſes can be comprehended under the *debts and deeds* of the interjected heir apparent, to which the heir paſſing by is made liable; yet, by deciſion in 1760, (Irvine *v.* Jack), a leaſe of 1260 years, granted by the heir apparent three years in poſſeſſion, was ſuſtained againſt the heir paſſing by. At all events, the clauſe of warrandice would conſtitute a claim of *debt* againſt the heir apparent, to which the heir paſſing by is liable. The tenant, before engaging in expenſive outlay, had need to know whether the heir apparent granting his leaſe has been infeofed, or been, at leaſt, three years in poſſeſſion.

In

In the caſe of adjudging creditors, whether of the heir apparent or heir paſſing by, there are additional circumſtances of inſecurity to ſuch a leaſe, (ſee Bell's Treatiſe on Leaſes, p. 77—80.), depending on niceties of law diſtinction, which I do not pretend to comprehend thoroughly, and which I ſhould like to ſee competently diſcuſſed.

I ſuſpect, though I do not pretend to know, that *apparency* and *paſſing by* refer merely to properties attained to in the natural order of ſucceſſion; but that, in tailzies, where all in the deſtined order ſucceed by one common title entered upon public record, there can be no ſuch thing as an heir paſſing by.

F.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Remarks on the Accounts given of the Eſkmount and Roxburghſhire Feeding Byres.

SIR,

I HAVE to requeſt the inſertion of the following ſhort remarks, which I feel myſelf obliged to offer upon the *very ſevere ſtrictures* in your Twenty-firſt Number, made by a *Stot-Feeder*, on the Roxburghſhire feeding byre.

That gentleman appears to feel hurt that any compariſon ſhould have been inſtituted betwixt the Eſkmount byre and the Roxburghſhire one, and is pleaſed to ſay, that the latter will turn out to be both leſs cleanly and leſs wholeſome than any common cow byre. That it is *more cleanly* and *more wholſome*, I might with equal confidence aſſert; but, as the gentleman has divided his ſtrictures into ſix ſections, I beg to offer a ſhort remark upon each.

In the *firſt* place, I reply, that the ſpace for cleaning out the dung in the Roxburghſhire byre, is only *two inches* narrower than the ſpace in the Eſkmount one: and the only difference in the middle ſpace is, having the tails of the cattle, inſtead of a wall, on one ſide.

2*d*, Having expreſsly mentioned that the urine might with equal convenience be conveyed to a compoſt dung court, I thought that it would have been impertinent to have taken up half a page of your valuable Magazine, to have deſcribed minutely, what I flattered myſelf would occur to any perſon, that by making the *declivity* of the *groops* tend to openings in either wall, the urine might then be conveyed in wooden ſpouts, or ſtone troughs, &c. along the outſide of that wall which formed the neareſt and moſt convenient paſſage to the compoſt dung court.

3*d*, The acceſs to the Roxburghſhire byre *does not lye through the*

centre of the dung court. When the wide doors are in the front, the acceſs is by a paved road 10 or 12 feet wide, which paſſes between the offices and the dung court.

4th, Allowing that the extra expence of building an Eſkmount byre, to hold twenty cattle, ſhould be only four guineas above the expence of the Roxburghſhire one, I am perfectly at a loſs to conceive how a ſpace of *two feet* in width, taken from the cattle-feeder's walk for depoſiting the turnips, would be infinitely preferable, as the carts could not be *backed* into that ſpace, nor the turnips conveyed to it by a wheelbarrow; for, after *two feet* are taken from the cattle-feeder's walk, there remains only a paſſage of *one foot ſix inches* for the poor feeder to ſqueeze himſelf along a diſtance of 80 feet. And in this I ſhould ſuppoſe he would find difficulty enough, without loading himſelf with turnips; for, unleſs he carries them on his back, I do not ſee how he is to get them into the ſpace allotted for them.

5th, By making the Roxburghſhire ſtalls 4 feet each, there would only be an increaſe in the width of the byre of 2½ feet.

6th, In his third remark, the gentleman complains *of the cattle being liable to be ſtarved to death with cold*; and in his ſixth, *of the want of ventilators to procure freſh air.*

The data from which this gentleman calculates the number of pits neceſſary to contain the turnips of 15 acres, would lead to a concluſion which, I ſuſpect, he is not aware of. His turnip barn, which is to contain turnips, ſtraw, and hay, is only 27 feet by 14; now, allowing the ſtraw and hay, with a paſſage for acceſs to the turnips to take up the ſpace of 13 by 14 feet, there remains a ſpace of 14 feet ſquare for the turnips; ſuppoſe the turnips to be piled in this ſpace even *to the height of fourteen feet*, 15 acres of turnips, *containing* 7605½ cubic feet, would fill this ſpace in the barn ſeventy-five times. And, allowing the feeding to continue for 24 weeks, it would be neceſſary to fill this barn more than three times in every week, however ſtormy or froſty the weather might be. But, were the turnips piled up in this ſpace to the height of ſeven feet only; the barn muſt be filled *every working day in the week*. Surely, then, this plan would be very *expenſive, if not unneceſſary*, were it, by the moſt ample allowance, to hold only one ſpare day's ſtore of turnips.

I, too, might add a P. S. conceived in perfectly ſimilar terms, 'that I have not once noticed the ſeveral uſeful purpoſes to which the byre might be put,' &c. &c. But both plans are now before the readers of the Farmer's Magazine; and to their judgements I leave them. I am, Sir, your conſtant reader,

S. E.

[The Annual Agricultural Fetes at Woburn having of late much excited the public attention, we are induced to preſent a correct ſtate of the Premiums offered for 1806, obligingly furniſhed by a reſpectable correſpondent.]

I. *Premiums for Fat Wethers.*

1. To the perſon who ſhall breed, and produce at Woburn Sheep-ſhearing, June 1806, the beſt two-ſhear fat wether—the premium of a *Cup, value ten Guineas.*

2. To the perſon who ſhall breed in Bedfordſhire, and produce at Woburn Sheep-ſhearing, 1806, the beſt two-ſhear fat wether—*A Cup, value Five Guineas.*—The ſame perſon not to have both premiums. The name of the breeder, together with the place where bred, to be duly certified, and given in at the time of ſhearing.

The wethers to be produced on Tueſday, between the hours of ten and eleven, at Woburn-Abbey:—They will be ſheared, weighed alive, killed, and weighed dead, and due attention paid to wool, carcaſe, and tallow.

II. *Premiums for Theaves bred in Bedfordſhire.*

1. To the perſon who ſhall breed in Bedfordſhire, and produce at Woburn Sheep-ſhearing, 1806, the beſt pen of three theaves—*A Cup, value Ten Guineas.*

2. To the perſon who ſhall breed in Bedfordſhire, and produce at Woburn Sheep-ſhearing, 1806, the ſecond beſt pen of three theaves—*A Cup, value Five Guineas.* The ſame perſon not to have both premiums.

The ſheep to be ſhewn in a ſtore ſtate, and to be produced at the Park-Farm on Tueſday, between the hours of ten and eleven. The claimants to produce certificates, that their theaves were bred in Bedfordſhire, ſpecifying the pariſh, and name of the breeder; alſo, that they have been regularly kept with the flock until the time of their being ſent to be exhibited.

III. *Sundry Premiums.*

1. To the perſon who ſhall produce at Woburn Sheep-ſhearing, 1806, the beſt boar—*A Cup, value Five Guineas.*

2. To the beſt ſheep-ſhearer—*Five Guineas.* Second beſt—*Four ditto.* Third beſt—*Three ditto.* Fourth beſt—*Two ditto.* Fifth beſt—*One ditto.*

If more than ten candidates, to draw lots. The trial to be made on the Wedneſday. Candidates to give notice on the Saturday before the clipping.

IV. *Premiums for Encouraging Improvement in Implements of Agriculture.*

1. To the perſon who ſhall produce at Woburn Sheep-ſhearing, 1806, the beſt and moſt uſeful newly-invented implement—the ſum of *Twenty Guineas.*

As

As it is the intention, in giving this premium, both to encourage, and to introduce to general notice, ſuch improvements in implements of agriculture as appear of real utility, it will be left to a Committee to decide,—1ſt, Which implement produced, deſerves the preference;—2dly, Whether any of them merit the reputation that the acquiſition of a premium might confer. The implements to be brought to the Park-Farm on Tueſday.

2. To the perſon who ſhall produce the plough which ſhall plough half (or a quarter) of an acre of land in the beſt and moſt huſbandlike manner—A *Cup, value Ten Guineas.* To the ploughman holding the ſame—*Two Guineas.*

Due conſideration will be paid to the merit of the implement, to the time of performing the work, the force employed, and the cleanneſs and depth of the furrow.

V. *Premium for Experiments between the Drill and Broad-caſt Huſbandry.*

To the farmer in Bedfordſhire, who ſhall produce the moſt ſatisfactory account of comparative trials between the drill and broad-caſt culture of wheat, barley, or oats, on not leſs than ten acres being in the ſame field—*Thirty Guineas.*

It is required that the farmers who ſhall be candidates for this premium, do give notice to the Duke of Bedford of their intention, that the crops may be viewed while growing, by ſuch perſons as the Duke may appoint.

It is expected that the account ſhould contain a deſcription of the ſoil, the preparation (manure, if any), quantities of ſeed ſown and drilled, hoeings, time and regularity of ripening, harveſting, and produce—verified by ſufficient certificates, to be produced at the Woburn Sheep-ſhearing in 1806.

N. B. It is required that the drilled crops ſhould be kept perfectly free from weeds.

VI. *Premiums for Shepherds.*

To the ſhepherd who ſhall have ſaved the greateſt number of lambs, on the 1ſt of June 1806, in proportion to the number of ewes, being not leſs than 200, put to the ram the preceding autumn—*Five Guineas.*

To the ſhepherd who ſhall have ſaved the next greateſt proportionate number—*Four Guineas.* To the third—*Three Guineas.* To the fourth—*Two Guineas.* To the fifth—*One Guinea.*

Certificates to be ſent in, on the firſt day of the Woburn Sheep-ſhearing, 1806, ſigned by the owner of the flock, and two other reſpectable witneſſes, ſtating the number of ewes tupped, the number of lambs ſaved on the 1ſt of June, and the age of the ewes, viz. the proportionate number of theaves, two years old, three years old, and full-mouthed ſheep.

VII. *Premium for Irrigation.*

To the farmer in Bedfordſhire who ſhall, between the 1ſt of January 1805, and the 1ſt of June 1806, have converted the greateſt quantity of land into water-meadow, not leſs than ten acres, on the beſt and moſt approved ſyſtem—*Fifty Guineas.*

Due notice of the quantity of land ſo converted, and of the expence incurred, verified by ſufficient certificates, to be ſent to the Duke of Bedford on or before the 1ſt of June 1806.

[The premium offered by Sir G. S. Mackenzie, Bart. would probably have been awarded to the author of the following paper, had he not appeared rather hoſtile to the principles which induced the reſpectable Baronet to offer that premium. Satisfied, however, as to the general merits of the Eſſay, and convinced that its inſertion would prove uſeful and beneficial to the great body of our readers, we applied for liberty to lay it before them, which liberty was at once granted in the moſt handſome and liberal manner. We therefore embrace the earlieſt opportunity of bringing it forward, and requeſt a continuance of the author's correſpondence.]

Essay on Storing of Turnips.

——Si quid noviſti rectius iſtis,
Candidus imperti: Si non, his utere mecum. Hor.

The introduction of turnips into the regular rotation of crops, is the moſt important improvement which agriculture has received in modern times. Previous to that event, the live ſtock were maintained, during ſummer, on the herbage which nature ſpontaneouſly produced on land exhauſted by a previous ſucceſſion of white crops, and overrun with the accumulation of weeds for ages; during winter, on the ſtraw and chaff of the preceding crop, with an occaſional allowance of oats. Under that ſyſtem, the fattening ſeaſon was confined within narrow limits,—the luxuriance of the natural graſs: No animal was fit for the ſhambles till the wane of ſummer; and as ſoon as the paſturage began to decline in autumn, the whole fattening ſtock was hurried indiſcriminately to the market; and their half-fed carcaſes, carefully ſalted, and frugally conſumed, ſatisfied the ſimple deſires of our forefathers till the return of veal and lamb in ſpring. The condition of the breeding ſtock, on their winter fare, was truly deplorable. If the ſeaſon was unuſually ſevere, or if the ſpring was unfavourable to vegetation, vaſt numbers of cattle were literally ſtarved to death; and thoſe which ſurvived, had become ſo feeble and emaciated at the approach of ſummer, as to require no ſmall aſſiſtance

aſſiſtance to *lift* them, ſet them on their legs, and ſupport them to the neareſt field which happened, in the faſhion of thoſe days, to be moſt graſs-proud. *

But, ſince the introduction of turnips, the grand *deſideratum* in the former practice of huſbandry has been ſupplied. From this improvement of their food, young ſtock continue their growth, and fat cattle are prepared for the market during every ſeaſon of the year. Turnips ſucceed the decline of the graſs, and afford ſucculent and nutritious food till the return of ſummer. Our farmers ſeem to brave the diſadvantages of their northern ſituation; to emulate, by their induſtry, the natural reſources of happier climes; and to compenſate, by the ſucculence of their turnip crops, the want of perennial verdure on their fields. But turnips, though poſſeſſing this invaluable excellence, are in ſome reſpects a precarious crop. After eſcaping the ravages of the fly and caterpillar,—after arriving at their full ſize towards the cloſe of autumn, they are liable to be injured, ſometimes to be deſtroyed, by the ſeverities of the enſuing winter. Storing is ſaid, by its advocates, to afford complete ſecurity againſt theſe calamities. In the preſent paper, I ſhall deſcribe the moſt approved methods of ſtoring, and afterwards eſtimate the peculiar advantages of that practice.

Though turnips have been cultivated in this country to a conſiderable extent, for upwards of thirty years, yet ſtoring is a practice of a much later origin, and is ſtill circumſcribed within narrow bounds. From the firſt introduction of that vegetable, ſome intelligent farmers regularly carried off the field, and laid up, under cover, a quantity of turnips ſufficient for two or three weeks conſumption. That practice, affording proviſion againſt the contingency of froſt, has extended itſelf into every diſtrict where the turnip huſbandry is properly underſtood. But the plan of raiſing and ſtoring the whole crop, immediately after harveſt, ſeems to have been adopted firſt in the Upper Ward of Clydeſdale, and to

* From the Review of Cumberland Agricultural Report, in the February Number of the Farmer's Magazine, it appears that this word, and this thing, though long ago obſolete in this country, are ſtill pretty common among our ſouthern neighbours. A few weeks ago, in the moſt elevated diſtrict of Tweeddale,

——where rivers, there but brooks,
Diſpart to different ſeas,

and where, in conſequence of their untoward ſituations, farmers cannot be ſuppoſed to be the firſt in introducing or imitating new improvements, Mr Findlater of Newlands was obliged to ranſack all the fallows in his pariſh, to procure as much wreck (roots of couch-graſs) as would front an embankment againſt an inconſiderable rivulet.

have thence travelled ſlowly into the adjoining counties. Even in the place of its origin, this practice has met with oppoſition; and in no other has it yet gained a complete eſtabliſhment.

There is conſiderable latitude in the ſeaſon of ſtoring. In wet and clay ſoils, to avoid the inconveniences of winter poaching, the ground muſt be cleared of the turnips immediately after harveſting the potatoes; but, in other ſoils, they may be allowed, with advantage, to remain on the ground ſome weeks later, as they continue to ſwell till overtaken by froſt. The ordinary time is about the beginning of November. It is of conſiderable importance to raiſe them on a dry day, that as little earth as poſſible may adhere to their roots, and to ſecure them in the ſtore-heap as they are raiſed, as a ſlight degree of froſt is then found to be highly injurious. As the month of November is proverbial for gloom and rain, it may ſometimes, however, be neceſſary to raiſe them when the weather is wet, or when the ground is moiſt; and, in this caſe, the following practical hint may be of advantage. Graſp the turnips by the leaves, give them a ſmart turn about half round, and then pull them upright from the ground. During this operation, the bulbs revolve on the tap-root as on an axis; the rotatory motion breaks the lateral fibres, and rubs off the adhering earth. It is obvious that this method is much preferable to the common way of raiſing a turnip clumſily in each hand, and of knocking their bulbs together till the adhering earth fall off.

Experience has amply demonſtrated the neceſſity of cutting off the leaves and tap-root (provincially called topping and tailing), and aſcertained the place where thoſe operations ſhould be performed. The ſection ſhould be made cloſe to the bulb. If the bulb itſelf be wounded, rottenneſs is then apt to enſue, and, though it ſhould be prevented, a quantity of the juices oozes out proportioned to the extent of the wound. The root is diſliked by all animals, as its acrid quality occaſions an immoderate diſcharge of bile, with its natural conſequences, gripes and looſeneſs. When any part of the leaves is left, turnips are liable to vegetate on receiving a ſlight degree of heat. As it is impoſſible, in practice, always to hit the point of excellence, and to perform the ſection with mathematical exactneſs, the operators ſhould be careful to err on the ſafe ſide,—to leave part of the leaves or root, rather than to injure the bulb, as it is wiſer to run the hazard of a ſlight vegetation than of intire putrefaction.

1. The earlieſt method of ſtoring turnips, was to ſecure them under roof, as it ſeemed but an extenſion of a practice, previouſly common, of laying on, in freſh weather, a quantity of turnips ſufficient for the conſumpt of ſeveral weeks. The diſadvantages of that method ſoon became evident. It was neceſ-

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ſary to pile large quantities, to find houſe-room for the produce of an inconſiderable field; and turnips, in that ſituation, ſpontaneouſly heated and putrefied. There is even danger in houſing ſmall quantities. The heat communicated through a partition wall from the fire of an adjoining apartment, and the breath of cattle, if it have acceſs to the ſtore of turnips, are ſufficient to commence and to ſupport a vigorous vegetation. * The ſprouts exhauſt the ſubſtance, and corrupt the juices of thoſe turnips from which they riſe; and, puſhing up between thoſe turnips which are laid uppermoſt, moiſten them with their ſucculent ſtems, exclude freſh air, by filling up the interſtices, and ſpeedily reduce the whole heap to a putrid maſh.

2. It is well known, that by pitting potatoes in the field, their flavour is better preſerved, and their vegetation is longer prevented, than by ſtoring them in the houſe. From the reſemblance between them and turnips, it has been analogically concluded, that the ſame practice might advantageouſly be extended to the latter. Mr Findlater of Newlands, to whoſe depth of reaſoning, and accuracy of obſervation, the Farmer's Magazine has borne ample teſtimony, is the only perſon, as far as I know, who has fairly made the experiment, and candidly declared the reſult. The ſituation which he choſe was perfectly dry; the pit was about five feet in breadth, and three in depth; the turnips were raiſed into a ridge of the uſual form above the mouth of the pit; one end was filled with common, and the other with Swediſh turnips; the pit was finally ſecured with a thick cover of ſtraw and earth. A few weeks after Hallowday, (when the turnips were ſtored) the middle of the ridge began to ſubſide; the depreſſion continually increaſed, and ſoon became ſo great as to create apprehenſions for the ſafety of the contents: the pit was opened in the beginning of February, and it was found that almoſt the whole of the common turnips were deſtroyed, and that about one half of the Swediſh only was preſerved. A Roxburghſhire correſpondent, in the Nineteenth Number of the Farmer's Magazine, mentions, that turnips may be preſerved in the field, as well as in the houſe, if three or four cart-loads only are laid together, and afterwards covered with a layer of earth, or of ſtraw and earth. This mode of pitting has been carried to a much greater extent, and employed for the preſervation of his whole

* I have been informed, by an intelligent farmer, that turnips ſtored in the end of his byre, grew ſix inches in a fortnight, during ſevere froſt. As putrefaction rapidly enſued, he ſpread the whole depôts upon an adjoining field: the froſt ſtopt vegetation, and one half of the quantity was ſaved.

crop, by Mr Aitken of Callands, in the pariſh of Newlands. The depôt is placed on a level with the ſurface of the ground; its dimenſions are rather ſmaller than thoſe of the common practice, afterwards to be deſcribed; and their cover conſiſts of ſucceſſive layers of ſtraw, earth, and ſtraw. In a late converſation which I had with Mr Aitken junior on this ſubject, I found that this mode, though affording complete ſecurity to the turnips, poſſeſſed no advantage over the common practice, in preſerving their ſucculence, or in retarding their vegetation at the approach of ſpring.

3. From thoſe early experiments, reſults this concluſion, that turnips, to be preſerved, during winter, from running into the extremes of vegetation or putrefaction, require a conſiderable expoſure to the air. On this principle is founded the preſent common practice of placing the depôt in a well-aired ſituation, adjoining to the feeding byre, and of protecting it with nothing but a covering of ſtraw. The ſtore-heaps, from conveniency, are commonly placed in the barn-yard. The turnips are laid down, cart thick, in the form of a narrow tapering ridge; the breadth is about five feet, the height is about four, and the length is perfectly immaterial; the depôt is covered with a thick thatch of ſtraw, and this thatch is finally ſecured with ropes. Common turnips, ſtored in this manner, are kept in good preſervation till the middle of April. Some intelligent farmers have begun to make ſome alterations, and, it is aſſerted, improvements, on this practice. They pay more attention to the dryneſs of the ſituation, than to its nearneſs to the feeding byre, in chooſing a ſpot for the depôt; bed the bottom well with ſtraw; erect a three-bar paling, or place ſheep flakes all around, inclining outwards, that the water-drop may be ſet off; raiſe the top of the heap as high as the turnips will lye, and thatch the whole with ſtraw in the uſual manner. In this caſe the angle at the top is acute, as the turnips can eaſily be piled up conſiderably above what is called the *ſquare* of a houſe roof. The depôt is about ſeven or eight feet in breadth at the baſe, and may ſafely be continued to any length required for holding the whole. In recommendation of this plan, there is a probability that turnips are better preſerved, and a certainty that leſs ſtraw is required for thatch, in it, than in the common practice. *

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* It may not be improper to mention an ingenious mode of ſtoring, founded, however, on the received principles, and practiſed by Mr Aitchiſon junior at Skirling. His farm produces a great deal of meadow hay, which he builds into a long narrow ſtack, adjoining and parallel to his

With regard to Swediſh turnips, the ſame principles are applicable to them, and they are ſtored in a ſimilar manner. From their ſuperiority in hardineſs, they admit of conſiderable latitude in the ſeaſon of ſtoring, and in the dimenſions of the ſtore-heap. Under this treatment they are eaſily preſerved incorruptible for a great length of time. Mr Findlater has uſed them as an evening *bonne bouche* to his milch cows until the 11th of June, when his clover and rye graſs were ready to ſupply their place. No other precaution was taken, than opening the depôt in the courſe of April, and rubbing off the ſprouts which had begun to riſe.

4. The only deviation, on principle, from the common method of ſtoring Swediſh turnips, took place laſt winter at Scotſtown. Captain Mackay, who combines, in an uncommon degree, an extenſive knowledge of agriculture, with an accurate ſuperintendance, and, conſequently, a ſucceſsful management of his farm, aware that Swediſh turnips, on the ground, are indeſtructible by our ſevereſt froſts, and that they, in common with every other ſpecies, require in the ſtore-heap a conſiderable expoſure to the air, reſolved to try how far this principle extended; and, for this purpoſe, formed of them a depôt of the ordinary dimenſions, in a dry, well-aired corner of his barn yard, without any covering, but branches of ſpruce fir, to protect them from the depredations of poultry. The turnips were ſtored, as I learned from his grieve (bailiff), in the beginning of January. Towards the end of March, when I ſaw them, about one half had been taken away for the feeding cattle. Excepting thoſe in the centre and bottom of the heap, none were in good preſervation. The appearance of thoſe on the outſide ſeemed to be an exemplification of the law of putrefaction in vegetables of a firm texture; thoſe parts of the bulbs which formed the interſtices were perfectly ſafe, while the

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his feeding byre. Its figure is exactly the half of a *hay ſow*, and will eaſily be conceived from the tranſverſe ſection in the margin; the quadrangle *a b c d*, is the ſection of the hay-ſtack, and the triangle *a d e*, is that of the ſtore of turnips. The ſide *a e* is thatched with ſtraw, and ſecured with ropes in the uſual manner. It will eaſily be ſeen that, by this contrivance, there is a ſaving of thatch, equal to about one half of what is required by the common form. The whole management, indeed, of this crop, deſerves high praiſe. Immediately after harveſting his potatoes, Mr Aitchiſon begins to ſtore his turnips; and, as ſoon as the field is cleared, while the leaves are yet freſh, and the ground yet dry, he turns in his young ſtock to 'gather up the fragments which remain, that nothing be loſt.'

the points of contact, ſimilar to the joints in carpentry, diſcovered evident ſigns of incipient putrefaction. From the failure of this experiment, it may be concluded, that Swediſh, as well as common turnips, become more delicate on being raiſed from the ground, and require a layer of thatch to protect them from the inclemencies of the weather.

I now proceed to eſtimate the advantages which the ſtoring of turnips is ſaid to poſſeſs, and to aſcertain in what circumſtances that practice is expedient.

1. *Storing as a ſecurity againſt froſt.* That turnips are overtaken by froſt, and congealed into a lump of ice, during winter and ſpring, is a frequent occurrence. It is well known that cattle, with no other food but frozen turnips, are in great danger of falling off, inſtead of improving. They are difficulted to make an impreſſion with their teeth; and no ſooner have they ſwallowed a mouthful, than they diſcover ſymptoms of univerſal uneaſineſs, raiſe their backs, draw in their feet, and fall a-trembling as if ſeized with the cold fit of an ague. It is univerſally admitted, that the ſtoring ſyſtem affords complete ſecurity againſt thoſe evils: but it is equally certain, that the ſame advantage is attained, in many ſituations, without ſtoring, and without any great degree of foreſight or management.

In the beginning of winter, turnips are not affected by a ſlight degree of froſt. Before it produce on them any ſenſible effect, the cold muſt be ſo intenſe as to form, on water, a pretty thick film of ice. The cauſe of this is obvious. By the cloſe of autumn, if the turnips have been properly ſet out by hand-hoeing, their leaves muſt form a cloſe mantle over the whole field; and this natural covering protects the bulbs from the firſt attacks of froſt. From this circumſtance it follows, that the moſt improvident farmer, whoſe cattle are only ſupplied day by day from the field, will ſuſtain little damage from the tranſient froſts which uſually precede Chriſtmas. After that time, he will be compelled to adopt the precautions employed by his wiſer neighbours, of laying in, during freſh weather, a quantity of turnips that will ſupply his conſumption for two or three weeks. It is ſeldom that our froſts outlaſt that period. If they ſhould continue longer, and if the ſtock of turnips is exhauſted, it will be neceſſary to adopt a practice—often ſucceſsfully tried in Tweeddale, and almoſt univerſal in the more ſouthern counties—of raiſing them frozen as they are in the ground, and of thawing them in a running ſtream, or in a drinking pool. The turnips are raiſed with an inſtrument formed for the purpoſe, a fork with two prongs, ſlightly curved inwards, and ſet perpendicular to the handle. Towards evening, they are carted from the field, and emptied

emptied into the pool. The common practice is to leave them under water till next morning: but an immerſion for two hours is found ſufficient. When taken out, they are as freſh and ſound as if they had never been frozen.

From the preceding ſtatement, it may be concluded, that, in the moſt fertile diſtricts of Scotland, where the climate is more genial, and the weather more uniform, the ſtoring ſyſtem poſſeſſes little eſſential advantage, in point of ſecurity againſt froſt, over the practice of leaving turnips on the ground. A little foreſight will, in moſt caſes, ſuperſede the neceſſity of raiſing them in a frozen ſtate, and even then immerſion in water is an eaſy and effectual remedy. It is impoſſible, however, to adopt this practice, probably, in the Highlands of Scotland, and in many diſtricts of the ſouthern counties. The froſts there ſet in early, are ſevere, and laſting. During the whole winter, there are almoſt continued ſtorms of froſt and ſnow, which muſt prevent turnips from being regularly carried off the field to the beſtial. It is found that turnips, piled together in a houſe, begin to decay after three weeks; and therefore, a ſtock of turnips, equal to the conſumpt of that period, is the utmoſt that a farmer can provide againſt the contingency of froſt. If the froſt outlaſt that time, (which is not an uncommon event), recourſe muſt be had to turnips on the ground; but it is very difficult to raiſe them during intenſe froſt, ſuch as often occurs in winter, in elevated diſtricts. A turnip, thoroughly congealed, when ſtruck with an iron tool, will fly into ſplinters. A pick-axe is neceſſary to raiſe it from the ground, and, even with it, great care is required to raiſe the turnip whole. I have been informed, that a farmer, in an elevated diſtrict of Tweeddale, being under the neceſſity of recurring to his turnip field during an intenſe froſt, found as much difficulty in raiſing the produce of a few yards, as he would have had in ſtoring his whole crop at the proper ſeaſon. It may thence be concluded, that, though the ſtoring ſyſtem is not ſo neceſſary in low-lying diſtricts, as a ſecurity againſt froſt, it is eminently advantageous in more elevated and expoſed ſituations, by rendering the farmer independent of the ſeverities of the weather—by enabling him at all times to ſupply his cattle with ſound and nutritive food.

2. *Storing as a preventive of putrefaction.* Turnips, left on the ground, are liable not only to be congealed into a lump of ice, but alſo to be reduced into a putrid maſh by the inclemencies of the weather. The practice of ſtoring, ſince it has been rightly underſtood, prevents any loſs from putrefaction: it has thence been concluded, that this circumſtance is a decided advantage in favour of that ſyſtem. On examining the matter more

more cloſely, and contraſting the loſs on the ground with the loſs in the proceſs of ſtoring, there will appear abundant reaſon to modify, perhaps to reject, that concluſion.

It is impoſſible to form a general eſtimate of the quantity of turnips annually deſtroyed. The loſs is ſo variable, being affected conſiderably by the ſoil and expoſure of the field, though regulated principally by the climate* and the ſeaſon, as to defy the moſt ſanguine calculator. It is even difficult to approximate to the truth; as the opinions of farmers, on this ſubject, from the difference of their circumſtances, are vague and contradictory. A member of the Eddleſtone Club has declared in your XVII. No. that 'in two years out of three, all our turnips on the ground at Chriſtmas, are entirely loſt by the froſt.' Having unbounded confidence in the veracity of your correſpondent, I readily acquit him of all intention to miſlead: but, as his ſtatement is quite different from the general ſentiment of his neighbours, I am inclined to ſuſpect a miſtake of the pen, or a ſlip of the memory. An intelligent farmer, in this neighbourhood, has aſſured me, that the annual loſs which he ſuſtains is ſeldom conſiderable; and that the whole quantity deſtroyed in the courſe of eight or ten years will not amount to the produce of an ordinary crop. I have been alſo informed by the Rev. Mr Robertſon of Eddleſtone, who has the merit of founding the Farmer's Club, which bears the name of his pariſh, and who has cultivated turnips to a conſiderable extent for nearly thirty years, that he has loſt only two crops in that period; and that the loſs, in both caſes, took place in ſpring. From my own obſervation, I am convinced that the loſs is not ſo great, and ſo early, as your correſpondent has ſtated. It conſiſts with the experience of every farmer, that turnips ſuffer little or no injury till the approach of ſpring. I am convinced that I do not underrate the effects of the weather, when I ſtate, that, on an average of years, even in an elevated diſtrict, one third of the turnips on the ground at Candlemas

* To ſhew the difference of riſks ſuſtained by turnips in different climates, I ſtate the following fact, which I have received from a party concerned.

In the 1784, Mr Dawſon at Frogden hired a field of turnips at Linton in Tweeddale, which were to be conſumed by ſheep. The ſeaſon proved very ſevere. The turnips were ſo hard frozen as to produce a neceſſity of hay-feeding. At the arrival of the thaw, they were ſo generally rotten, that an expreſs was ſent to Mr D. to come and diſpoſe of the ſheep. He obſerved, that whereas at Frogden only one turnip in ten was *hurt*, at Linton only one in ten was *ſafe*.

Candlemas only is deſtroyed by froſt *. It is preſumed that two thirds of the crop are conſumed during the three months of winter, and without any material loſs. The third which remains on the ground till ſpring, is the only part which ſuffers; conſequently the annual loſs, at an average, may be ſtated at one third of one third, or, reducing the fraction, at one ninth of the whole crop.

There is every probability that a much greater loſs than this is ſuſtained by the practice of ſtoring. After lying ſome time in the ſtore-heap, turnips ſhew evident indications of decay. To the eye they ſeem ſhrivelled; to the hand they feel lighter. It is the common ſentiment of all who have tried the experiment, that turnips in a ſtore-heap, loſe one third of their weight, by ſpring—a loſs equal to what I have eſtimated as being ſuſtained by turnips when left in the field. Beſides this inevitable, there is another probable, diſadvantage attendant upon ſtoring. The turnips muſt be carried off the field ſoon after, commonly immediately after harveſting the potatoes; their further growth is prevented: whereas, had they been left on the ground, they would certainly have increaſed in ſize, probably matured and improved their juices, till interrupted by the ſeverity of winter. But, perhaps, the ſtrongeſt objection to the ſtoring ſyſtem is the circumſtance, that turnips, however carefully ſtored, are leſs palatable to cattle, than when taken freſh from the ground. That this inferiority is real, and conſiderable, was ſatisfactorily evinced by an experiment made in preſence of the Eddleſtone Farmer's Club, at their meeting in the firſt week of March laſt. They produced two turnips, the one from a ſound ſtore-heap, and the other freſh from the field. Several cows were turned out ſucceſſively to prove them, and all, after ſmelling at both, began to eat the turnip from the field; till it was finiſhed, the other was not touched. This inferiority cannot be referred to a diminution of ſucculence, (for it was diſcovered by the diſtant perception of ſmelling), but to a putreſcent flavour, ariſing probably from the operations of *topping and tailing*. Though the leaves and taproot were cut off with mathematical preciſion, ſtill two conſiderable wounds muſt be made on each turnip. The juices ooze out at thoſe wounded parts; and fluids, when partly extravaſated (if I may

* On ſhewing this paper to the above mentioned correſpondent, I received an acknowledgement to this effect.—'The general ſentiment of his neighbours is, that one fourth or one fifth of the turnip crop only is deſtroyed, by ſpring.' I have ſtated the loſs at one third, as it is ſtill ſufficient for my argument, and as it muſt include the moſt unfavourable ſituations.

may adopt medical language) loſe their vitality, and run into putrefaction. A putrid cruſt is thus formed on the ſurface of each wound, and muſt be eaten by cattle before they arrive at the ſound interior. Of the nature of this injury, ſome conception may be formed by thoſe perſons, who, from the careleſſneſs of their cook, have accidentally ſeen, or taſted, a potato that had been wounded in the proceſs of harveſting.

From theſe obſervations it is reaſonable to conclude, in general, that the ſeverities of the weather occaſion leſs loſs than the practice of ſtoring. In favour of the latter, however, there is this great advantage, that the loſs is always uniform, can be foreſeen, and provided for; while, in regard to the former, the loſs is perfectly uncertain, being regulated by cauſes of which we have no foreſight, and over which we have no controul. This circumſtance is often very embarraſſing to farmers in expoſed ſituations. In ſome years, if the weather be favourable, the whole crop, as happened this ſeaſon, may eſcape unhurt by froſt; and there may be a ſuperabundance in ſpring, with no adequate ſtock of cattle to conſume it. On the contrary, if the weather be very ſevere, as happened in the year 1784, almoſt the whole turnips, intended for ſpring food, are deſtroyed, and the farmer will find great difficulty, as well as ſuſtain conſiderable loſs, in diſpoſing of his cattle, before they are fully fattened. It may therefore be ſuppoſed, that, in expoſed ſituations, the practice of ſtoring is adviſeable to a certain extent—ſay one third of the crop—that there may be always a certain ſupply for ſpring conſumpt; but a practice has been introduced, which promiſes to render even that extent of ſtoring unneceſſary—of earthing up * the turnips in the drills, with a double mould-board plough, at the end of autumn.

The cauſe of putrefaction does not ſeem to be preciſely underſtood. It certainly is not the froſt *per ſe*. Turnips, congealed into a lump of ice, are perfectly freſh after being thawed in water. In the beginning of winter, they are ſcarcely affected by a black froſt, though very ſevere; and even when the ſeaſon is further advanced, they remain ſafe during every degree of froſt, if the ground is covered with ſnow. It has alſo been obſerved,

* Sir George Montgomery Bart. of Magbiehill, has lately procured from Yorkſhire ſome ſeed of a ſpecies of turnips, which entirely ſuperſedes this operation. Their bulb is always ſituated below the ſurface of the ground. They were diſcovered accidentally growing in a field of common turnips, ſome years ago. They were allowed to ſeed, were afterwards ſown by themſelves, and are now cultivated to a conſiderable extent in the ſouthern parts of Yorkſhire.

ſerved, that a turnip field with a northern expoſure, in all caſes, ſuſtains leſs injury than a field with any other aſpect. From theſe facts, it may be inferred that the ſun acts a part in the deſtruction of turnips, and that his influence is injurious, by producing a ſudden tranſition from cold to heat. Turnips, in the beginning of winter, ſuffer little during black froſt, becauſe their leaves, then ſucculent and expanded, intercept completely the rays of the ſun; and at the approach of ſpring, the ſame event happens, though the leaves are deſtroyed, if ſnow afford a covering to the bulbs in their ſtead. But if a black froſt occur at that ſeaſon, turnips ſuffer an irreparable injury. They freeze every night; the ſun, then pretty high and powerful, thaws them every day. In the morning there is a rapid tranſition from cold to heat; and in the evening there is a ſimilar tranſition from heat to cold. It is well known, that a turnip, when wounded, ſpeedily decays: probably thoſe frequent viciſſitudes of heat and cold, by producing ſudden alternations of expanſion and contraction in turnips, deſtroy their texture, reduce them to the ſtate of dead matter, and ſubject them to the general law of putrefaction.

From this explanation, it will eaſily be diſcovered in what reſpect earthing up is beneficial to turnips. In ſpring froſts, it ſhields them from the burning rays of the ſun, ſupplying the place of their natural covering of leaves, or of the accidental protection of ſnow.* A ſpirited farmer, in an elevated diſtrict of Clydeſdale, has carried ſucceſsfully this principle to its utmoſt extent, by ploughing-under, and whelming, in the bottom of the furrow, that part of his turnips intended for ſpring conſumption. It is believed that the thick incumbent furrow-ſlice, and the reverſed poſition of the turnips, conſiderably retard vegetation at the approach of ſpring: but this advantage, if it really exiſt, is certainly counterbalanced by the difficulty of raiſing them from ſo great a depth. Even earthing up is ſometimes productive of inconvenience in this reſpect. If the froſt be ſevere, it becomes laborious to raiſe them with a pick-axe; if the ground

* An illuſtration of this fact will readily occur to every perſon who has ſeen a field that had been cropped with potatoes, ploughed up in ſpring. Notwithſtanding the utmoſt care in harveſting, a ſmall quantity of potatoes eſcapes the notice of the gatherers, and remains in the ground during winter. Thoſe which lye on the ſurface, and to which the ſun has acceſs, are found, in ſpring, blackened and decayed: thoſe which are buried deeper, and to which the froſt only is acceſſible, ſeem perfectly freſh in the baſkets of cottagers, who eagerly attend the plough on theſe occaſions; and, if that attention is omitted, perfectly quick, from the vigorous ſtems which they ſend forth, at the approach of ſummer.

ground be wet, it is difficult to free them from the adhering earth. It ſeems neceſſary, therefore, (to ſuperſede, entirely, not only the *neceſſity*, but alſo the *convenience*, of the ſtoring ſyſtem), that a ſpecies of turnip were diſcovered poſſeſſing a degree of hardineſs ſufficient to reſiſt every inclemency of our northern climate, and every viciſſitude of our variable weather. In the ſequel, ſome reaſons will be produced to ſhew that this diſcovery is now made.

3. *Storing, as admitting the culture of the more valuable ſpecies of turnips.* Before the introduction of the ſtoring ſyſtem, its advocates argue, farmers were obliged, in expoſed ſituations, to cultivate not the moſt valuable, but the moſt hardy ſpecies of turnips. The yellow garden variety was found to poſſeſs this property, and was cultivated to a conſiderable extent, notwithſtanding the ſmallneſs of its ſize, to ſecure a certainty of ſpring food. But, under the ſyſtem of ſtoring, while this advantage is obtained in its full extent, the greateſt latitude of ſelection is admitted, either as to the greater ſize of the turnips, or as to their greater palatableneſs to cattle. This argument ſeemed concluſive. The yellow garden ſpecies was laid aſide, and the common white, which is much more valuable, was ſubſtituted in its ſtead. From recent diſcoveries it ſeems probable, however, that the ſtoring ſyſtem is unneceſſary to the ſucceſsful culture of the more valuable varieties. The prejudice in favour of the delicate and eye-pleaſing bulk of common turnips, is on the decline. Experience has ſhown that the eye is not the beſt judge, and that bulk is not the ſureſt criterion of excellence in turnips. Facts are rapidly accumulating to encourage a belief, that a ſpecies is diſcovered, hardy, yet valuable, equal to the common in ſize, and ſuperior to it in nutriment.

The firſt improvement on the old ſpecies, was the introduction of the Swediſh turnip, about twelve years ago. Its culture ſoon became frequent, from the notice taken of it, and the recommendations beſtowed on it, in the Bee, a periodical miſcellany, then publiſhing in Edinburgh, by Dr Anderſon, moſt meritorious in its deſign, and very extenſive in its circulation. In the conterminous parts of Clydeſdale and Tweeddale, where it has been cultivated for a number of years, its habits and its excellencies are well aſcertained. Its ſuperiority in feeding, its vigorous reſiſtance to every inclemency of the weather, and its obſtinate retention of ſucculence after vegetation commences in ſpring, entitle it indiſputably to rank as the farmer's lateſt ſpring food: while its affection for a ſoil rich by nature, or enriched by manure; its inferiority as a fallow crop, from requiring to be early ſown, and from covering imperfectly the ground with

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its leaves; its deficiency of produce, even after making every allowance for the richneſs of its juices, and the denſity of its texture; render it an object not ſo much of choice, as of neceſſity, and limit its culture to the extent of a ſuccedaneum, when every other ſpecies is ſhrivelled or putrefied. It is poſſible to preſerve common turnips, in tolerable condition, till the middle of April: but, as they loſe greatly when the ſeaſon is ſo far advanced, and as they are preſerved with difficulty if the weather be genial, it may be more adviſeable to have all of them conſumed a month earlier, and to raiſe of Swediſh turnips as many as ſhall be required to ſupply the conſumpt from the middle of March, till the end of ſpring. In expoſed ſituations, they may advantageouſly be cultivated to the further extent of affording partial aid to milch cows in the beginning of May, as the paſturage is then ſeldom forward enough to ſupply them with ſucculent food. When preſerved ſo very late, even Swediſh turnips are apt to decay, and, in conſequence, to communicate a diſagreeable flavour to milk and butter, unleſs they are topped and tailed when raiſed from the field, and immediately houſed in a cool ſituation.

Another ſpecies has lately been introduced into this diſtrict, which promiſes to be of incalculable advantage, as they ſeem to poſſeſs, in an eminent degree, the characteriſtic excellences of the common and Swediſh turnips. They reſemble, in colour, the yellow garden variety. They have been obſerved, for two or three years paſt, growing in fields of common turnips, and are incidentally noticed by ſome of your correſpondents, in the two laſt Numbers of the Farmer's Magazine. But the only perſon, as far as I know, who has cultivated them to any extent, and for a length of time, is Captain Mackay of Scotſtown.* My own knowledge of them is confined to the obſer-

* He learnt that there was cultivated in the county of Cumberland an excellent ſpecies of turnip, and purchaſed a pound of its ſeed at Keſwick. Upon ſowing it next ſeaſon, he obtained turnips which anſwered his higheſt expectation. Soon after, he received a military appointment which required his abſence from home, and which he filled till towards the cloſe of the late war. On his return, he found that his grieve, notwithſtanding his expreſs injunctions, had failed to preſerve that ſpecies; but upon ſearching a drawer where turnip ſeed uſed to be kept, he found ſome lying looſe in the bottom, which, when ſowed, produced the wiſhed for turnips, mingled with every other ſpecies; and he has ever ſince extended its culture, and will raiſe as much ſeed this ſummer as ſhall ſupply a whole pariſh. As the

vations which I made, and to the information procured at Scoſtown, in March laſt. From the grieve, or ſteward, I learnt, that they had been ſown at the ſame time with the common turnips, and that they certainly exceeded them in ſize. The latter being all carried off the field, and conſumed by cattle, it was impoſſible to inſtitute a compariſon; but from the appearance of the yellow ſpecies, I am inclined to believe the grieve's opinion was correct. All who have found them among common turnips, agree that, from the ſame time of ſowing, they equal them in ſize. It may thence be concluded, that the yellow turnips poſſeſs, in full perfection, the peculiar advantages of the common white, as they admit of late ſowing, and produce well-ſized bulbs. They alſo ſcarcely ſhrink from a compariſon, even with the higheſt excellences of the Swediſh ſpecies. Captain Mackay is ſo firmly convinced of their hardineſs, that he now uniformly uſes them as an intermediate ſupply in the beginning of ſpring, between common and Swediſh turnips. About the middle of March, I examined a part on his field, and found ample reaſon to juſtify the propriety of that management. After conſiderable ſearch, I noticed only two bulbs that were injured; but the injury in neither ſeemed to proceed from the inclemencies of the weather; the rottenneſs was only partial, occaſioned evidently by a diſeaſed root in the one, and by a deep cut in the other. I obſerved alſo ſeveral wounded deeply by hares: but the part which remained was uniformly freſh. Though laſt ſeaſon was very favourable to turnips, and therefore not a fair trial of their reſiſtance to froſt, it muſt be admitted, from the facts now ſtated, that yellow turnips poſſeſs a hardineſs, ſimilar in kind, if not equal in degree, to what has been aſcribed to Swediſh. In proof of their richneſs, there are facts equally deciſive. They evidently, in point of weight, flavour, and ſucculence, hold an intermediate place between the Swediſh and common varieties. It is well known that hares are admirable connoiſſeurs in turnip matters, and ſo great epicures, as not to touch the common ſpecies, if the Swediſh are within their reach. I have already ſtated, however, that they did not diſdain to feaſt heartily on the yellow turnips, though they were ſeparated from the Swediſh by a furrow of a few inches in depth, and of a few feet in breadth. A ſimilar reſult was obtained, when both ſpecies were ſubmitted to the judgment of cattle. I ſliced down ſeveral turnips of each, and, having counted the number of ſlices

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the Farmer's Magazine is univerſally read, I would requeſt, through that medium, our Cumberland brethren to communicate the hiſtory, the culture, and the excellences of the field yellow turnip.

ſlices reſpectively, put them all into a baſket. After preſenting them ſucceſſively to ten cattle, I found that about one half of the original quantity was conſumed, and that the remainder, left in the baſket, contained an over-proportion of Swediſh ſlices. For the preference there ſhewn to the yellow ſpecies, though certainly ſurpaſſed, in richneſs of flavour, by the Swediſh, I can account only, from their ſuperiority in ſoftneſs and ſucculence. The hard ſkin of the Swediſh has always been conſidered as a diſadvantage in feeding; whereas the ſkin of the yellow ſpecies, being thinner and ſofter, ſeems better adapted to the imperfectly-cutting jaws of black cattle. In their further recommendation, it may not be improper to ſubjoin, that though Captain Mackay now reſerves them for ſpring food, he, at firſt, conſumed them by his milch cows, in an earlier part of the ſeaſon; and that he procured from this food, in the middle of winter, butter with the high colour and rich flavour of midſummer. From theſe facts it may be inferred, with a degree of certainty, that the ſyſtem of winter ſtoring is unneceſſary to the ſucceſsful culture of the more valuable ſpecies of turnips; that delicacy, ſo far from being inſeparable from, is inconſiſtent with high excellence; and that the yellow ſpecies, though equal to the common in ſize, and ſuperior in point of nutriment, is poſſeſſed of ſufficient hardineſs to reſiſt the inclemencies of winter without the aid of artificial protection.

4. *Storing, as admitting the introduction of wheat on a turnip fallow.* From the preceding obſervations, it ſeems evident, that the ſtoring of turnips is neceſſary only in expoſed and elevated diſtricts, to attain ſecurity againſt the inclemencies of the weather; and that, in every more favoured ſituation, it is directly injurious, from requiring turnips to be raiſed from the ground before they have attained their full growth; from the evaporation of their juices while they lye in the ſtore-heap; and from their acquiring a putreſcent flavour, and becoming unpalatable to cattle. Even in the latter, however, that ſyſtem is attended with one advantage, which more than compenſates its numerous evils,—the facility with which it enables the farmer to introduce wheat on a turnip fallow.

There can be no doubt, that a turnip fallow, in moſt caſes, is a ſufficient preparation for wheat. A bare fallow ſeems indiſpenſably neceſſary only on wet and ſtubborn clays: but this is a ſpecies of ſoil moſt unfavourable to the culture of turnips. If they are forced to grow in ſuch a ſituation, they cannot ſerve as a ſubſtitute for ſummer-fallow; and the ſtoring ſyſtem muſt be recurred to immediately after harveſt, not to make way for ſowing wheat, but becauſe it is impoſſible, in our moiſt climate, to carry off turnips from ſuch lands during winter. But on a dry

ſoil, of every ſpecies from a light ſand to a rich loam, which turnips chiefly affect, every advantage of a ſummer fallow is obtained by cropping with turnips: the frequent ploughings before the ſeed proceſs, and the various hoeings, after the plants appear above ground till they cover it with their leaves, effectually pulverize the ſoil, and clear it of weeds. On light lands of this deſcription, if wheat is intended to follow turnips, it may be ſown at an early, and at its proper ſeaſon. If the proceſs of ſtoring commence immediately after harveſting the potatoes, the ground may be cleared to receive the wheat in the beginning of November. When it is wiſhed, however, to derive the full benefit of the turnip crop, it will be neceſſary to delay ſtoring ſome time longer, till the bulbs arrive at their full ſize: yet, even in this caſe, it will be eaſy to put the ground in order during the courſe of winter, and to embrace the moſt favourable ſeaſon of ſowing it with ſpring wheat. It is obvious that, if ſtoring be omitted, wheat after turnips is a precarious crop. If the ground is only cleared, as turnips are required for the conſumpt of cattle, they muſt be regularly carried off during the whole of winter, and the beginning of ſpring. The carriage of ſuch a bulky crop, in our moiſt climate, and during our wetteſt ſeaſon, inevitably occaſions a degree of poaching on almoſt every ſoil, and greatly retards the operations of ploughing, ſowing, and harrowing, in ſpring. Unleſs the weather be very favourable, the ſeaſon is too late for ſowing wheat, and it is conſidered as more advantageous, in general, to introduce barley or oats after a turnip fallow. The ſtoring ſyſtem, therefore, is advantageous, in the exact proportion that a crop of wheat is ſuperior to a crop of barley; and this profit muſt greatly overbalance the various loſſes which turnips ſuſtain in that proceſs.

The reſult of the preceding obſervations is, that the ſtoring of turnips, abſtractedly conſidered, is attended with direct and unavoidable loſs: but, when viewed in reference to the climate and agriculture of Scotland, is neceſſary in unfavourable ſituations, and eventually advantageous in every other;—neceſſary in high lands, where the ſeverities of winter prevent turnips from being regularly carried off the ground to ſupply the conſumpt of cattle; and advantageous, in low lands, by enabling the farmer to introduce wheat after turnips, where he could otherwiſe obtain only a crop of oats or barley.

G.

FOR

FOR THE FARMER'S MAGAZINE.

Extracts from FOURCROY ON THE PHILOSOPHY OF VEGETATION, *tranſlated and abridged by a Correſpondent.*

(Continued from page 301.)

PART II.

Of the Influence of Soils, and their Amelioration, upon Vegetation.

1. From obſervation of vegetables fixed in the earth, mankind in all ages muſt have believed, that the ſoil in which their roots are placed, furniſhes the principal materials of their nouriſhment; and that from the ſoil they derive all the ſenſible qualities by which they are diſtinguiſhed. Hence the ancient opinion, of the relation between particular ſoils and the nature and qualities of their vegetable productions, has almoſt always been a chief fundamental doctrine in agriculture. Theſe ideas, of the influence of the ſoil to encourage particular plants, or to communicate to each plant a peculiar character, have been handed down to us from ancient times; and every agriculturiſt of the preſent day is fully perſuaded, that vegetables extract diſtinct characters or qualities from the particular ſoil in which they grow, excluſively dependent upon the nature, qualities, and circumſtances of that ſoil—ſuch as characteriſtic taſte, peculiar flavour, and the like.

2. Such numerous examples, eſtabliſhing the opinion, that the qualities of the ſoil are communicated to the plants which it produces, render the fact indiſputable. To this circumſtance a peculiar mode of expreſſion has been appropriated; and vegetable productions are ſaid to taſte of the ſoil or diſtrict in which they grew. Thus grapes and other fruits, and eſpecially leguminous plants, ſtems, leaves, and roots, all poſſeſs certain peculiarities in taſte, flavour, conſiſtency, and colour, evidently modified by the qualities of particular ſoils in which they grow. This may even be extended to wines, and other productions from the fermentation of vegetable matters, reſulting from ſome hidden alteration in the vegetable juices. It is well known that wines participate in the nature of the ſoils on which the grapes were produced; And under the technical term of *bouquet*, the difference is remarked, of thoſe produced from ſoils that are dry, ſandy, ſilicious, flinty, moiſt, too rich, or too ſtrong. Theſe general facts, which cannot be doubted of, and the particular diſpoſition of each peculiar ſoil to produce certain plants in preference to others, or in greater perfection, unanſwerably prove, that every particular ſoil has a direct influence upon the nature and qualities of ſuch vegetable productions as grow there.

3. It is obvious, that what are uſually called earths, or ſoils, are extremely compounded maſſes, leſs or more in a pulverulent form, of very complicated mixture. Conſequently, before we can ſatisfactorily determine the peculiar actions which they exert upon vegetables growing in them, ſo as to modify the greater part of their qualities, it is previouſly requiſite to inquire into the operation, in this reſpect, of earth ſtrictly ſo called, and then to diſcover the effects of foreign ſubſtances upon the earthy particles with which they are mixed. The one is the real baſis of the ſoil, or the ſoil itſelf ſtrictly ſo called; the others are to be conſidered more or leſs as manures, which will be treated of in the next ſection.

4. We ſhould ſeek in vain, among the earths in which plants grow, for a pure or ſimple earth, according to the preciſion of chemical language. Even the fineſt, drieſt, and moſt barren ſand, which approaches neareſt to ſilicious earth properly ſo called, conſiſts always of a mixture of quartz and alumine, and frequently has a ſmall addition of calcareous matter. The chemiſts who have at firſt applied this ſcience to inveſtigate the principles of agriculture and the philoſophy of vegetation, have minutely examined the manner in which ſeeds thrive in each ſpecies of ſimple earth chemically prepared, ſo as to aſcertain how far each pure earthy ſubſtance contributes to vegetation, or the nouriſhment of plants. Though, from theſe experiments, it has been aſcertained that ſeeds germinate and grow readily in barren earths, thoroughly waſhed, perfectly inſipid, and entirely deprived of every portion of ſaline matter, providing they are ſufficiently watered; it is likewiſe thoroughly proved, that no one of theſe earths excluſively or powerfully encourage vegetation. Seeds may likewiſe be made to germinate in metallic powder or filings, on ſponges, cotton, flannel, or ſuch like ſubſtances, if ſufficiently ſupplied with water: But, by all theſe means, vegetation either only continues for a ſhort while, or at leaſt does not arrive at its proper termination, * unleſs with ſome delicate ſmall plants, which only require a ſmall portion of nouriſhment.

5. From theſe laſt mentioned experiments, it has been argued, that the ſoil only ſerves as a ſtation or prop for the plants which grow in it, receiving and holding faſt their roots; that it only ſerves to ſurround thoſe roots with water and nouriſhing materials, of which they have need, and of which it is merely the receptacle or conveyance; that all that is requiſite in the ſoil, for fertility,

* Though not expreſſed by the author, I ſuppoſe he underſtands, by the proper termination of vegetation, the perfecting of fertile ſeeds.—*R. r. r.*

fertility, is, that it be eaſily penetrable by the roots, and ſufficiently retentive of water to keep them always moiſt; ſufficiently divided, to permit the air, and ſome light, to paſs between its particles; and not too much compacted, to compreſs and injure the tender fibrils of the roots. It muſt, however, be allowed, that ſome ſmall portion of the earth itſelf penetrates by means of the roots, and is carried into the internal organization of the plant, by that abſorptive power which belongs to their organs, either in conſequence of extreme diviſion of the particles of the earth in which they grow, or of actual ſolution in the water which they abſorb.

6. In a diſſertation on ſoils, (*terræ geoponicæ*), the celebrated Bergman concludes, from conſideration of a great number of experiments, that the beſt ſoil for vegetable production, ought to contain, two parts of calcareous earth, one part of magneſia, four parts of alumine, and three parts of ſand. All the modern experiments have diſtinctly and certainly proved, that ſalts, properly ſo called, contribute nothing towards vegetation or fertility; and that, on the contrary, there is reaſon to believe they are regularly and conſtantly injurious; that pure ſimple earths, by themſelves, or mixtures of theſe, each in a pure ſtate, are not capable of producing fertility; and that the moſt fertile ſoils loſe all their properties of fertility, by expoſure to the action of fire. Theſe laſt facts are chiefly aſcertained by the experiments of Gioberti of Turin.

7. From all the experiments on this ſubject, which have been infinitely varied, reſpecting the influence of ſoils upon growing plants, one uniform, regular, and conſequently certain concluſion is derived, that of all the earthy ſubſtances to be found in the mixed matter called ſoil, calcareous earth moſt certainly contributes chiefly to fertility. On this point there exiſts nothing equivocal, uncertain, or contradictory. It has been alleged that this circumſtance ariſes from moſt calcareous bodies retaining ſome portion of their animal original, which acts the part of a manure. In my opinion, I have no doubt that this ſuperior fertility of calcareous earth is derived from the carbonic acid which it contains. However this may be, it is certainly true, that of all the earthy bodies, or earthy ſalts, calcareous matter is decidedly the moſt uſeful in agriculture: Hence agriculturiſts frequently employ it to renew the fertility of their exhauſted or impoveriſhed ſoils.

8. Although calcareous earth is both the moſt common and moſt uſeful amelioration which can be employed, and thence, that marl holds the firſt rank even among manures; yet the art of ameliorating ſoils, in its full extent, muſt not be confined to one

procedure, but muſt be varied, according to the nature of the ground or ſoil upon which the improving agriculturiſt has occaſion to operate. Marl, or chalk, are certainly well adapted to improve land that is too ſtrong, and which contains too much clay: But a ſoil which is already too uniformly calcareous, or too ſandy, may on the contrary require the addition of clay to communicate to it that proper degree of tenacity which it wants, that it may not dry too quickly *.

R. r. r.

(To be continued.)

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

On the Benefit which Farmers would derive from the Study of Botany.

SIR,

ON reading a letter ſigned S. L. p. 429. vol. V. of your Magazine, I could not help regretting the inability of its author to convey the information he wiſhed to diſſeminate. Had the botanic names of the plants been given, the way would have been open to further inveſtigation; but till that is done, the knowledge of their qualities muſt remain with himſelf.

In the ſame volume, p. 453., *Agricola* ſays, 'As parſley is a perennial plant, it will anſwer for fields that are to be laid down for paſture for a conſiderable time.' It is known that parſley (*apium petroſelinum*) is biennial: a few plants, out of many, may live three or four years, eſpecially if not allowed to run to ſeed; a circumſtance that happens frequently with many biennial plants.

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* I muſt be permitted here a few obſervations. The reaſoning of the author in this place, though perhaps juſtly chemical, is in my opinion not very ſtrictly practical. Soils that are too tenacious, though certainly much improved by lime, or other calcareous matter, would be greatly ameliorated by ſand, if not too expenſive; Shell ſand, in ſuch caſes, were perhaps the very beſt poſſible improvement.

Calcareous ſoil, of courſe, needs no calcareous addition: For it, clay, and perhaps ſand, would be an excellent amelioration.

Soil too ſandy will certainly be conſiderably improved by clay; but, on ſuch, calcareous matter is likewiſe highly uſeful; perhaps clay marl in large doſes is the beſt of all. Yet I believe no ſoil whatever ſo ſoon exhauſts or loſes all kinds of manuring as ſand. It is corroſive, and proverbially ſaid to devour manures; becauſe they only contribute to vegetation.

Of all manures, clay to ſand, or ſand to clay, are the moſt expenſive, as requiring ſuch enormous quantities, to ſerve any uſeful purpoſe: Theſe are in a manner to create ſoil.—*R. r. r.*

plants. Therefore, as *Agricola*'s information tends to miſlead, I beg leave to correct his error as to the duration of the plant; and ſtate it as a further proof of the need of better information. I do not pretend to ſay how far it may be proper to cultivate parſley as food for different animals; experiments are the only way to aſcertain that point. It is already known to be eaten with avidity by ſeveral; but the extent of its uſefulneſs remains to be known. With regard to its cultivation, I rather think *Agricola*'s information is not correct. If ſown in mixture with graſs or other plants, or by itſelf in the broad-caſt manner, there can be little hopes of ſucceſs, as the ſeed lies long in the ground before it comes up; and when it does ſpring, the plants are for a conſiderable time very weak, ſo that they would be choked by others,—either weeds, or thoſe intended to riſe with it. Therefore the cultivation of it, with any hopes of ſucceſs, muſt be in drills, where it can be kept clear from weeds.

In your Twenty-firſt Number, p. 53, I obſerve *Agriculturæ Amicus* gives an anecdote of toads being fond of parſley, and recommends to cultivate the curled in preference to the common. The curled variety is no doubt the moſt beautiful, but it does not appear to be the moſt hardy; for I have frequently obſerved the curled to die, where the other ſtood in winter. As I do not obſerve any of your correſpondents has been very particular in their remarks on this plant, I with the more freedom venture on communicating the above; and am certainly of opinion, that experiments to aſcertain the influence of it ought to be made.

The above, with what your correſpondent *Miſo-Mixis*, in your Twenty-firſt Number, p. 1, obſerves relative to the ſelection of grain for ſeed, has led to think that a more extenſive knowledge of plants among agriculturiſts would be highly beneficial, and that it is more eſſentially ſo to them, than to thoſe employed in horticulture, as the operations of the former are conducted on a larger ſcale than thoſe of the latter: at any rate, there are ſufficient proofs that both ought to have more knowledge of the nature and qualities of plants. Every farmer ought to make it his ſtudy to know the duration and qualities of the different plants that grow on his farm, there being no doubt but every plant is uſeful in ſome ſituation or other; and what is commonly termed weeds, is only a plant out of its proper place. By obſervations and experiments, he may diſcover which is moſt nutritious for food, or uſeful as medicine, or whether injurious or poiſonous to different animals; hence be able to judge in what proportions, and in what ſituations, they ought to be encouraged. But before we can think of communicating their uſes, or the reſult of our experiments to others, we muſt firſt know how to diſtinguiſh

ſtinguiſh the plants by ſuch names as are univerſally known, as is evident from what has been wrote by S. L.; for it cannot be known what plants he means by ſuch names as *bent*, *ling*, *deer-hair*, *moſs-crop*, &c.; whereas, had the generic and ſpecific names been given, it would have ſaved his elaborate deſcription, and at once enabled his readers to trace out what was meant.

Many farmers and others might acquire, by no tedious application, as much knowledge of botany as might be of great uſe; and others, who may have a favourable opportunity and a turn for it, may acquire a more extenſive knowledge, and be highly uſeful to themſelves and others. By a knowledge of the ſexual ſyſtem, the farmer would be better enabled to diſtinguiſh and improve the different plants on his farm. The ſtudy is amuſing, as well as uſeful; it would naturally give an inclination to examine minutely every plant he caſts his eye on, eſpecially if it ſeemed to differ from what is common: by that, he may obtain new varieties better ſuited to his purpoſe, and be encouraged to make experiments in order to produce new varieties. Alſo, by examining plants in every ſtage of their growth, he will acquire a more accurate knowledge of vegetation, may diſcover the cauſe of diſeaſes, and find out a remedy.

The ſubject of *Miſo-Mixis*'s letter on the ſelection of ſeeds, is of the greateſt importance to all cultivators, the general neglect of which would appear to indicate that the import of it is not generally known. The varieties of different ſpecies of plants in cultivation are numerous; many of them are not worth cultivating, eſpecially where, by a little attention in the power of every one to beſtow, ſuperior ones may be ſelected. While theſe are continued to be cultivated in mixture, the evil continues to increaſe. Many of the graſſes, among which I include the oats, barley, wheat, &c. run into endleſs varieties, as do cabbages, turnips, peas, beans, &c. From the ſportiveneſs of theſe and many others, it is obvious that the greateſt care is neceſſary to prevent the ſelect ſorts from being adulterated by the diſperſion of the farina of others. The intention of nature in producing theſe varieties would appear to be that of affording ſorts ſuited to different ſoils and climates, and that man ſhould aſſiſt in cultivating and improving what ſhe has ſo profuſely furniſhed. Hence the greateſt attention ſhould be beſtowed in looking for and improving new varieties. When an ear, or a few ſeeds, &c. of any of the kinds we wiſh to cultivate are obtained, they ſhould be put in a garden, and brought forward till enough is obtained to be worth cultivating in the field: and, to produce new varieties, experiments ſhould be made by ſowing two or more kinds in the ſame ſpot, from which there will be a chance of obtaining one or more kinds different, and perhaps ſuperior to their parents.

Great

Great attention has been beſtowed on rearing the beſt kinds of domeſtic animals: had not this been the caſe, the horſe and the ox, &c. would in all probability have remained as they were originally found; for theſe improved varieties are not ſpecifically diſtinct from their original, which, if allowed to breed promiſcuouſly, would (although many valuable varieties might be produced) degenerate, and conſiſt of an infinite variety of animals not at all ſuited to the purpoſe wiſhed for. To the truth of this, I ſuppoſe every farmer or breeder will aſſent. The ſame being the caſe with plants, it ſurely muſt be the intereſt of cultivators to beſtow ſimilar attention.

If any thing can be gleaned from the above hints worth inſerting in your valuable Magazine, you are the beſt judge to determine. I am, Sir, your moſt obedient ſervant,

M. S.

[A reſpectable friend, who correſponds with the Board of Agriculture, wiſhing to learn the mode uſed in the county of Kent for feeding boars, and preparing and curing them afterwards for *braun*, ſent ſome queries to the Board on theſe ſubjects. Lord Sheffield, the Preſident, ordered inquiries to be made; and the following letter from a gentleman near Canterbury, with the queries and anſwers, is inſerted, at the requeſt of the reſpectable gentleman with whom the inquiry originated.]

On the Feeding of Boars, and Curing Braun.

LETTER TO LORD SHEFFIELD.

My Lord, *Kent, 21ſt December* 1804.

I am almoſt aſhamed to ſay I duly received the letter the Honourable Board did me the honour to ſend, dated the 22d June laſt, containing queries on the ſubject of braun. I have not, however, been able to procure any anſwer from the trade, who make a very great ſecret of their buſineſs; and am therefore only able to return ſuch anſwers as have occurred to me in reſiding near a place where many boars are every year fattened, and believe I am correct in what I have preſumed to anſwer. If they are of any uſe to the Honourable Board, I ſhall feel myſelf happy in having communicated them. I have the honour to be, my Lord, your Lordſhip's moſt obedient and very humble ſervant,

To the Right Honourable Lord Sheffield. A. G.

Query 1. At what age are the boars put to fatten?

Ans. At all ages. Two years is preferred.

Query 2. Are they not cut before fatted?

Ans. No, no!!

Query

Query 3. On what food are they fatted?

Ans. Beans generally. One maker is giving boiled potatoes this ſeaſon. Sulphur is given in their water.

Query 4. Are they fatted in a caſe, or looſe?

Ans. They uſed to be put ſingle, in a caſe, ſo ſmall, they could not turn round, only juſt get up to eat, or lye down; but ſome are now put up, eight together, in larger pens, and are found to feed better than when ſingle.

Query 5. How long? and, *Query* 6. At what time of the year put to fatten?

Ans. The drove of boars come to Canterbury about the 15th of October, and are immediately put up; and they kill from that time till a fortnight after Chriſtmas, as they come forward in ſucceſſion?

Query 7. & 8. What breed? and what ſize of boar is preferred?

Ans. They buy of all breeds; prefer a large ſize, with a full deep ſhoulder, as that part comes to moſt braun.

Query 9. What is the operation of preparing or curing?

Ans. Boiling, ſeaſoning, rolling the collar in a cloth, binding it round with tape, &c. &c.

Query 10. What is the general value *per* ſtone, before fatting?

Ans. They buy by head, from two to three guineas, as buyer and ſeller can agree. Many farmers regularly ſell their boars to the ſame maker every year, and leave the price entirely to him.

Query 11. Value fat?

Ans. I do not know.

Query 12. What is the uſe, weight, and price of the collars?

Ans. Two ſhillings *per* lib. A good collar will weigh about 30 lib.

Query 13. What uſe is made of the hands, gammons, head and feet?

Ans. The heads are ſold as dogs meat; knuckles and feet ſold to the poor, &c. The lean parts made into ſauſage meat, and ſold at ſixpence *per* lib.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

The Utility of granting Bounties on the Exportation of Corn demonſtrated; with ſome Remarks on the Opinions of Dr Smith and his Followers.

SIR,

IT will be fortunate if the '*Outline View*,' &c. inſerted in your Magazine of May laſt, ſhall give riſe to a full diſcuſſion of the curious and important point which is the ſubject of it. Dr Smith,

Smith, long before his book was publiſhed, was in the habit, both in his lectures and in converſation, of maintaining the hurtful tendency of bounties on every ſpecies of commodities, and, as far as I know, was the firſt writer who has in a deciſive manner reprobated them. Whoever has read the fifth chapter of the fourth book of his Wealth of Nations muſt know, that he conſiders the production of a quantity of corn, ſufficient to leave an overplus for exportation, as abſolutely eſſential to 'the plentiful ſupply of the home market.' The production of this overplus, however, he contends, cannot be promoted by a bounty on the exportation of corn, which he condemns, for the following reaſons: *Firſt*, Becauſe, upon the general principle applicable to bounties on all other commodities, a greater part of the induſtry of the community is thereby forced to a leſs beneficial employment than it would otherwiſe go to: and, *ſecondly*, Becauſe, in the particular inſtance of corn, it does not promote the end intended; for though its immediate effect be to raiſe the price of corn in the home market, yet, as the price of corn regulates that of every other neceſſary, the price of theſe muſt, of courſe, riſe along with it; and, conſequently, the farmer reaps no benefit; becauſe, what he receives from the increaſed price of his corn, he is obliged to pay in the augmented price of the neceſſaries for which he has occaſion, which leaves him exactly in the ſame ſituation he was before; and, beſides, the intention of the bounty is altogether defeated, becauſe it cannot, in any degree, be the cauſe of a ſuperior quantity of corn being raiſed. This, if I underſtand it rightly, is Dr Smith's argument, the component parts of which it ſhould ſeem to be ſomewhat difficult to reconcile; for, if the bounty neither can occaſion the production of a greater quantity of corn, nor be of any benefit to the raiſer, it is not eaſy to ſee how it can force a greater quantity of the induſtry of the country from a more profitable employment into that channel, than would otherwiſe go there. Whether there be any particular profeſſion that is more favourable to the virtue and rectitude of conduct of the individuals who exerciſe it than another, it is the buſineſs of moraliſts to determine; but no man will probably deny that the profeſſion, if there be any ſuch, which contributes the moſt to the regular and certain ſupply of food, is the beſt calculated to promote the happineſs and ſecurity of the ſtate: till the fund of proviſion for the maintenance of an individual ſomewhat exceeds his annual expenditure, he never can be ſaid to be certain of ſubſiſtence; the ſame holds good of the nation of which he is a member.—The moſt determined enemy to the bounty allows this overplus to be the moſt deſirable object for any ſtate; and the ſimple queſtion ſeems to be, Has the bounty on corn a tendency to occaſion this overplus?

Some

Some have told us that the world, or at leaſt Europe, is a great commonwealth, in no one part of which corn can ever be wanting while it exiſts in another. Others inform us, that corn is not to be regulated on the ſame principles as any other commodity; while, immediately after, they bring both vegetable and animal, and even human life into the compariſon with it. All, however, that ſeems neceſſary is, to inquire what is the moſt probable means to increaſe the production of *any* commodity; and thoſe moſt unfriendly to the bounty will not ſurely pretend, that corn ſhould be placed on a worſe footing, conſidered merely as a manufacture, than any other. No perſon, one would think, can be diſpoſed to deny, that the produce of any particular manufacture is increaſed by encouragement, and by being particularly favoured. To what is it but to this, that Dr Smith attributes the increaſe of the induſtry of the towns over that of the country? and what is this, in other words, but a bounty?

A duty, for inſtance, is laid on ſugar, which, at leaſt, till very lately, was not only drawn back on exportation, but alſo a conſiderable ſum more, in the form of a bounty: a tax, for example, is laid on manufactured cotton cloth, all of which, and perhaps, as it may be managed, ſomething more, is drawn back on exportation. No one ever doubted that this encouraged the production of a greater quantity of theſe goods, and at a cheaper rate, than if no part of the tax had been drawn back;—all this Dr Smith and his followers think very reaſonable. But when a tax, which is now fixed, it may be ſaid, at 4s. per pound, comes to be laid on land, they conſider it as a moſt hurtful regulation, and moſt adverſe to the increaſe of the production of corn, that any part of this tax ſhould be drawn back on the very ſmall portion of this manufacture which, both poſitively and comparatively with other manufactures, is exported. Upon what principle of juſtice or equity, it may be aſked, is this founded? But it is not the land-tax alone, which, upon a fair compariſon with the taxes paid by other manufactures, that of corn is entitled to draw back. Tithes and poor-rates are direct taxes which it pays, and to which no other manufacture is ſubjected; why is not it as well entitled to a return of theſe, in proportion to what it exports, as they are to that of their cuſtoms or exciſe which they have paid? and why is it to be denied the ſame encouragement to carry its overplus to a foreign market that they have? or by what rule is it contended, that what tends to create plenty and cheapneſs in the one caſe, will not have the ſame effect in the other? A bounty makes every particular thing to which it is applied plentier, and of courſe cheaper; even men and women, nay, ſoldiers and ſailors, and certainly ſtateſmen, as a late witty writer has brought them forward,

ward, are increaſed, nay created, by a bounty: and, unleſs it can be clearly ſhown that there is ſomething in the nature of corn which places it, in this reſpect, in a different predicament from other manufactures, it is obvious that, in a well regulated ſtate, they ſhould be placed on the moſt perfect equality; and, if the circumſtances of that ſtate admitted of the free exportation and importation of every ſpecies of commodity, duty free, the landholder would, with a bad grace, talk of a bounty for his: But, when almoſt every thing he has to buy is encouraged by a bounty, it ſeems hard that what he has to ſell ſhould be denied the ſame advantage. It falls then to be conſidered, how far there is any thing in the nature of corn, which renders the effect of a bounty on it, different from that on any other ſpecies of commodity: but, previouſly, it may be noticed, that the firſt objection, 'that the bounty on corn has the tendency to draw a greater part of the induſtry of the country from a more to a leſs beneficial employment' ſeems not to be well founded, *firſt*, from the inconſiſtency already obſerved in the argument adduced to eſtabliſh it, and, *ſecondly*, becauſe, as has juſt been ſhown, nothing more is aimed at, than to put corn, in this reſpect, on a footing of equality with other manufactures, which even the bounty does not do; for it by no means equals the amount of the direct taxes which the land pays, but which, like other manufactures, it is entitled, on the ſame principle, to draw back. The price of any commodity actually in the market, does not depend on the expence it coſts to bring it there, but on the proportion, in the then ſtate of things, between the ſupply and the demand. If, in conſequence of the ſupply being greater than the demand, this price does not repay the expence, with a reaſonable profit, of bringing the commodity to market, the cultivation of the article will no doubt be leſſened till ſome means be fallen on to make it do ſo; and as remedies are generally carried too far, the ſupply, in its turn, becomes unequal to the demand, and, of courſe, the price of the commodity riſes above its proper level. There ſeems to be no cure for this, but to keep the ſupply and demand as near their proper proportion as poſſible; and this, as in the caſe of an individual, can never be done, unleſs there be ſomething to ſpare; the only way to accompliſh which, is to make the manufacturer certain that his goods ſhall not remain on his hands. If, in the nature of things, it is impoſſible to keep the home market on this ſteady ſituation, while it depends entirely upon itſelf, it ſhould ſeem that a foreign market is the only reſource left. It has been ſaid that our population will always ſecure a market at home, becauſe population and food depend on each other: true—but not in the progreſſion which he who made the obſervation has placed it; the

the cart is there put before the horſe: population follows food, not food population: the reverſe is miſery itſelf, and, till the population do overtake the increaſe of food, a market muſt be found for the overplus, or it will ceaſe before it has its effect. To be ſure, in an induſtrious country, it will not be long till the population do overtake it; but ſtill, it does not do ſo immediately; and how is this to be provided for in the interim, but by a foreign market? That the price of corn may, in a conſiderable degree, affect the price of all other manufactures, will not be diſputed; but it may not, perhaps, be ſo clear, that it is altogether ſo omnipotent, in this reſpect, as it is ſtated by the antagoniſts of the bounty to be; and it is certainly much leſs ſo than it was at the time Dr Smith wrote, when corn conſtituted almoſt the ſole maintenance of the labourer, and when manual labour had ſo great a ſhare in the production of every manufacture. Since that time, animal, and various other kinds of food, have been, to a great extent, ſubſtituted for corn; and the improvements in machinery, and materials of all kinds, have made the proportion of manufactures which is executed by the hand of man much ſmaller than it was in the days of Dr Smith. But, even at that period, its effect has ſurely been overrated. If the hold our manufactures have of the foreign markets depended on the price of our corn, and the wages of our labourers, compared with thoſe of other countries, we ſhould not poſſeſs the preeminence we have, for one year. In a market which requires a given quantity of various kinds of food, and where the ſupply cannot be augmented, there is no doubt that a diminution in the quantity of any of them will affect the ſituation of the reſt; but this ſuppoſes a country arrived at its higheſt pitch of production; to which none, that we have heard of, and certainly not Great Britain, has yet attained.

If, indeed, an abſtraction ſhould take place in any of theſe articles of food, in a country cultivated to the utmoſt, the portion of land employed in raiſing other articles muſt neceſſarily be diminiſhed; but if there be ſtill plenty of uncultivated land, is it not the natural conſequence that labour will be applied to make it produce the quantity wanted? If the bounty is ſuppoſed, by diminiſhing the ſupply, by the quantity of which it occaſions the export, to create a deficiency in the market, is it not more natural to ſuppoſe that the preſent land will be better cultivated, or that waſte land will be employed to make good this deficiency, than that land, already employed in the production of another ſpecies of food, almoſt as neceſſary, ſhall be withdrawn from it for that purpoſe? If this be the effect of the bounty, what can follow from it but good, in as far as a more populous and better cultivated

cultivated country is worthy of that name. That this mode of relief may have an end, there can be no doubt; but we are ſtill a great way from that point; and all the ſplendour and happineſs attendant on an increaſing country lye on the road to it. Upon no other ground, but that of a country being cultivated to the utmoſt, can the notion that a bounty does not occaſion an increaſed production of corn be ſupported. What are premiums and bounties on other commodities given for, but to increaſe the quantity produced? and why ſhould not this, at leaſt *in the firſt inſtance*, have the ſame effect in the production of corn? And if it have this effect in the firſt inſtance, the conſequences which are ſo poſitively ſtated as counteracting it, cannot enſue; for, if a greater quantity of land be brought into the culture of corn, a greater quantity muſt be produced; and the huſbandmen, by the production of this greater quantity, will make a greater profit at a ſmaller price; and, therefore, the prices of corn will not riſe, and the farmer will be in a better ſituation than he was. But the probability is, that the benefit to the country will not ſtop here. In the relative prices of corn in Great Britain, it is hardly to be ſuppoſed that the preſent bounty, at leaſt, is ſufficient to enable our corn to meet that of the other parts of Europe abroad on equal terms. Till the bounty, then, is ſufficient to occaſion actual exportation to a conſiderable extent, it is a dead letter, as far as that is concerned; but it is not ſo in another point of view. The farmer, under the conviction that, to a certain extent, a foreign market is open to him, and that his commodity can never altogether remain on his hands, improves and cultivates with confidence. From the flouriſhing and increaſing circumſtances of his own country, which this very cultivation ſtill farther promotes, he finds that he can diſpoſe of his augmented produce at home, which, in every inſtance he will, for his own intereſt, prefer to any foreign ſale, on equal, or even better terms; and the home market will, unqueſtionably, at all times have the firſt offer. If the bounty, therefore, be the cauſe of the production of an increaſed quantity of corn, it is impoſſible the effects, which its enemies predict, can ever flow from it. The firſt reaſon which has been given, why the bounty cannot occaſion the cultivation of more corn, is, that it muſt raiſe the money price of corn, and that its only effect will be to degrade the value of ſilver. The enemies, and indeed ſome of the friends of the bounty, have talked much of value and price, and of real price, nominal price, and money price; the diſtinctions between which, they mutually accuſe each other of not comprehending. Value and price, though often confounded together, ſeem to admit of a pretty preciſe diſtinction. The different modifications of price, how-

ever, do not ſeem to preſent themſelves ſo readily to the mind. The real price of any thing can only be relative, and ſignify the quantity of any other commodity which it can at a particular time command; for no commodity can invariably be exchanged at all times for the ſame preciſe quantity of another. Money is the ſymbol of this relative price; for, abſtractedly, it can never be called the price of any thing, except in the ſenſe of its marking this relative proportion. Nothing can make this more plain than the experience we have now acquired, that almoſt the whole commodities of the greateſt commercial country in the world may be exchanged by the intervention of money of no intrinſic worth whatever. It would be deſirable to ſee the diſtinction between real, and nominal, and money price, ſtated with more preciſion than to dull conceptions it has hitherto been: no one who has yet attempted it has been able long to preſerve the diſcrimination. Dr Smith and his followers on this point, (for in his general doctrines all men follow him), affect to regard this as very eaſy; but when they talk of the effect of the bounty being the degradation of the value of ſilver, they ſurely do not conſider how ſmall a quantity of ſilver, comparatively ſpeaking, enters into the circulation of Great Britain. But even though ſilver compoſed the whole of the money of the country, its value as a commodity could never be affected farther than to that extent; and one ſhould think that the greater quantity which was abſtracted for the purpoſes of money, in place of degrading, would have the effect of raiſing its price as a commodity; and, accordingly, we ſee that, in ſpite of the riſe in the price of corn, and almoſt every other article, the price of ſilver, as a commodity, has not been degraded. How is this accounted for on the principles of the enemies to the bounty? That a ſuperior fertility of mines, or a defalcation in the demand, may affect the price of ſilver, like every other commodity, may be eaſily ſeen: but how the price of corn is to have this effect on it, more than on any other commodity, does not ſeem to be ſupported either by reaſon or experience; and ſtill leſs does it ſeem to follow, that, in conſequence of the bounty, no more corn would be raiſed, or that the farmer would be no better off than he was before. The obvious effect of the bounty is, in the firſt inſtance, to produce more corn; but if more corn be produced, unleſs the population increaſe with it, (a conſequence, however, moſt devoutly to be wiſhed, and which will follow), the price cannot increaſe, at leaſt at the preſent bounty; and the farmer, by being encouraged to raiſe more corn, will be enabled, at a lower price, to draw more profit to himſelf. It muſt, however, be confeſſed, that the whole is a very difficult ſubject; and it is to be wiſhed that ſome perſon of ſuperior

perior abilities would come forward, and inveſtigate it to the bottom. One thing, however, cannot be denied—that both parties have pled their pretenſions too high; and, in the preſent ſituation of this country, a liberty to import grain at a moderate duty is perhaps of as much conſequence to the proſperity of the landholder, as to that of the manufacturer. The bounty, in the preſent circumſtances of this country, can never have any effect, but the very beneficial one, of an ideal market to the farmer. The proſperity of the landholder, and the increaſing value of his eſtates, depend on the number of inhabitants induſtriouſly employed. If theſe are limited to the increaſe of corn which this country, with every ſuppoſed exertion, can be made to produce, the augmentation of the population muſt go on very ſlowly indeed; whereas if, by importation, the food, and of courſe the numbers, were augmented in proportion to their induſtry, their wealth, and conſequently their want of the more refined articles of luxurious living, which afford by far the higheſt rents for ground, would increaſe in proportion; but theſe muſt, in a great meaſure, be furniſhed from lands at home; and, of courſe, in place of the value of theſe lands being diminiſhed by the importation of corn, they would be increaſed, in a much greater proportion, by the increaſed number of opulent and induſtrious inhabitants, than if no ſuch importation had taken place. This ſeems to be the liberal view of the ſubject in the preſent advanced ſtate to which Great Britain has arrived; and it would be a happy thing, if both parties would lay aſide their prejudices, and meet each other on theſe grounds.

I am, Sir, your moſt obedient ſervant,

July 1805. A———.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Curſory Thoughts on the Corn-Laws, and the Encouragement that ought to be given, ſo as Corn might be Plentiful.

Sir,

On the ſubject of the corn laws, and the trade in grain, I ſubmit the following obſervations, compreſſed as much as poſſible.

1. To prevent foreign dependence, the culture of grain at home ought to be encouraged, ſo as, if poſſible, to leave a ſurplus in common ſeaſons.

2. There is no phyſical impoſſibility in attaining this object. It *has been* attained, within the limits of a few years back; and if our conſumpt has greatly increaſed, ſo has our ſkill in cultivation. Look at our waſte lands and our unemployed manures—lime, marl, clay, ſhell ſand, fleech, moſs, water, &c. We have immenſe reſources yet unuſed.

3. The more corn that we rear, the lower muſt the price be

4. Whatever diſcourages the culture of grain, muſt certainly raiſe the price.

5. It is not the price of a buſhel, or a boll, that can be any ſtandard for aſcertaining the farmer's *profits*. It is *the ſurplus he can ſell*, after deducting ſeed and bread, multiplied into that price, that aſcertains his returns; from which deduct his *charges*, and then the profit appears.

6. It often happens, in bad years, that the farmer has little ſurplus to ſell; but, in good ſeaſons, he has much to bring to market. He therefore gains more money frequently when prices are low.

7. By importing corn too freely, the foreign cultivators have the large prices; while the Britiſh farmer, owing to unpropitious ſeaſons, has at ſuch times little to bring to market, and muſt be content with the low prices of abundant ſeaſons, when he can ſend more. This reduces the culture of grain at home, and increaſes it abroad.

8. Merchants, both at home and in foreign parts, would draw equal profits from the commerce of grain, if we could renew our export trade, inſtead of importing it.

9. As agriculture furniſhes bread to the manufacturer, enlarges his facilities of conveyance, and extends his market at home; and as the manufacturer increaſes the farmer's market, infuſing a ſpirit for improvements, and adding to the means of effecting them, therefore it appears wiſe in the farmer and the manufacturer to afford mutual and cordial ſupport to each other; and particularly, to allow, without murmur, a fair price and a free market for the produce of their reſpective arts.

10. Candid men will find, that the price of grain in common years, when the markets were ſupplied by our own farmers, has riſen leſs than that of labour, of land, manures, implements, and work in trade.

11. If this remark does not apply to bad ſeaſons, it muſt be remembered, that our grain markets are very dependent, in ſuch years, on the merchants, and on foreign cultivators; and this fact ought to teach us, how little theſe people either can or will relieve us, when we want corn at home.

12. Can grain be reared well and abundantly, if, by the conduct of ignorant or intereſted individuals, the firſt of all manufactures be ſuffered to labour under diſcouragement, and to decline more and more?

Let a fair price be given cheerfully; let the Britiſh farmer be always preferred on equal terms, and encouraged to rear abundant ſupplies; let victual ſtores and ſhops be opened in every town

and

and village, and free markets allowed, without impoſts of any kind; let mobs and alarms be ſuppreſſed, for they always produce two effects—they raiſe the price, and diſcourage culture; let there be a free paſſage for grain and meal, to every city, town and diſtrict, in the Britiſh empire; and let the farmers be enabled to increaſe their ſupplies, in the aſſurance of being not only permitted, but aſſiſted, in exporting the ſurplus to foreign nations; and if proper meaſures be then adopted as to leaſes, manures, multures, &c. ſo as to remove obſtructions, and to increaſe confidence and encouragement, the culture of grain muſt of neceſſity be extended: and this is the only certain method that can ever be taken to keep the prices moderate, and prevent dearth and famine.

ALPINUS.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

On Ploughing Matches.

SIR,

ON the ſubject of ploughing matches, I beg leave to obſerve, that, when conducted with any degree of judgement, they encourage the workmen to aim at becoming more perfect in their buſineſs, and to acquire the habits of ploughing ſtraight, with an equal and proper depth, and with ſteadineſs and expedition. They alſo kindle a degree of emulation to excel each other in this important branch of huſbandry; and the marked attention of the public to it, has good effects in ſtimulating workmen to make better ploughs, and farmers to have better teams. I muſt alſo add, that there is not a diſtrict in Britain where theſe effects would not prove advantageous; and that, in every diſtrict where matches have been inſtituted by the Highland Society, ſo far as I have ever heard, there was abundant need for them.

LEONIDAS.

FOR THE FARMER'S MAGAZINE.

Receipt for making Salve for Curing the Foot-Rot in Sheep.

To make an Engliſh pint of Red Salve;

Take 8 oz. of Bole-Ammoniac,
6 oz. of Fine Honey,
4 oz. of Burnt Alum.

Mix the above ingredients together; pour in as much train oil as will make it of a ſufficient thickneſs. If the foot is come to a humour, pare it as nigh as poſſible, not to make it bleed, and waſh it clean with a little vitriol water; then apply the ſalve; and keep the foot dry, if poſſible, elſe the ſalve will not have its proper effect.

G. W.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

SIR,

I AGAIN take the liberty of ſending you another *query*, as a ſupplement to my laſt paper. As I feel myſelf very inadequate to the ſubject, I truſt that ſome of your *experimental* correſpondents will give it an *impartial* and *deciſive diſcuſſion*; for the moſt part of our *Enlightened Glendale-Ward Farmers* differ in this point of rural economy.

Query, Which is the beſt and moſt profitable plan, of the three following methods, of feeding cattle with turnips?

1. Fed in a hovel, ſuch a one as that at Eſkmount, (deſcribed in Vol. III. p. 8. of your Magazine), and after the ſame manner?

2. Fed in the ſame manner as above every way, except being chained up to their cribs by the horns, inſtead of being chained by the ſtakes? or,

3. Fed in open courts, with covered ſheds, for ſhelter; having wooden troughs to eat their turnips out of, with tumbling hecks for their ſtraw?

I have ſtated the above query under three heads, as plainly and laconically as poſſible; and, if conſiſtent with the plan of your Magazine, I will offer a few preliminary arguments, generally advanced by the different *feeders* of *cattle*. 1*ſt*, The advocates for the firſt two * methods argue, that oxen will feed more in a given ſpace of time, when confined to their crib, than when left to roam about the fold at pleaſure; for this reaſon (ſay they) when confined to their crib, they are not only enticed, by hearing and ſeeing their partners eat, but are, in a manner, latterly forced to eat; while, when left at liberty, (eſpecially when half fat, as the ſaying is, or when the fat begins to cover the kidneys), they turn nice and delicate in their ſtomach, and will not eat their fill.

2*d*, The advocates for the laſt plan argue, that an ox will not only feed as faſt in their way as the other, but that he will tallow more in a given ſpace of time; that the fat he lays on is firmer; that

* The reaſon of my linking the arguments of the two firſt advocates together is, that the only material difference betwixt them is in the manner of faſtening the ox to the crib; *i. e.* the ſecond advocates ſay, that the ox, when chained by the horns, gets at his turnips better, and with more eaſe, &c. George Culley Eſq. formerly fed his oxen according to the two firſt methods, but has lately (laſt year) altered his plan (at Crookham weſt field) to that of the laſt advocates. Whether this be an experimental change, or an experimental trial, time will ſhew.

that he is fed at leſs expence, and will loſe leaſt weight (exſudation) in driving to the market; and that, when at market, the butcher will give more per ſtone for the out-lier, than for the ſtall-fed ox, &c. With theſe and ſuch hortatory-like arguments, they differ from their opponents. But as the forementioned arguments are only *theoretical hearſay*, and not *experimental*, they do not tend to ſolve the queries of your conſtant reader. I am, Sir, yours, &c.

Northumberland, April 6. C— E—t.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

On the Working of Thraſhing Machines.

SIR,

FINDING that my letter, page 50. volume V., on Stopping a Thraſhing Machine drawn from Low Levers, has been honoured with more notice than I expected or intended, I am induced to trouble you again with a few lines in anſwer to your correſpondents *R.r.r.* and *Mr Farey junior*. My ſole motive for writing at all on the ſubject, proceeded from conceiving that I had fallen on an expedient to ſtop a mill drawn from low levers, the inconvenience of ſtopping which, your correſpondent *R.r.r.* ſeemed to complain of. I alſo was in hopes, that the method I had adopted might be of ſervice to all that claſs of farmers who had the misfortune to have thoſe very awkward machines. Being of that claſs myſelf, I found (after laming my horſes, and breaking a lever or two), that it was neceſſary to fall on ſome contrivance to remedy the evil. I firſt tried traces to the lever *in front* of the horſe. The imperfections of that method (as ſtated by Mr *R.r.r.*) very ſoon became obvious. I then had recourſe to light ſhafts, which was rather an improvement, but ſtill a very awkward buſineſs, as it induced the horſe to incline inwards, beſides other diſadvantages. *At laſt*, I raiſed the levers and put *perpendicular* ſhafts to them.—I ſhall here take the liberty of adviſing every perſon about to erect a thraſhing machine, to beware of economy. I ſet out on that plan; and, what with *alterations* and *amendments*, the machine has coſt me as much as a powerful, well conſtructed one would have done at firſt, and, after all, *is not the thing*. As to the clumſy crooked iron at the end of the lever, I was led into the error, by the *aſſertions* of the mill-wright. It is perhaps unneceſſary for me to obſerve here, that I had never turned my attention to thraſhing machines, being but young in the farming line. However, having my doubts on the ſubject, notwithſtanding my mill-wright, I, with the aſſiſtance of a gentleman ſkilled in mathematics and mechanics, brought the matter to the teſt of

experiment, and I subscribe to all that Mr *R. r. r.* advances on the subject. His diagram is as plain as any mathematician could make it; and he will take notice, that in my letter, p. 50, I only hinted that the definition of the horse's draught was not perhaps so easy a matter as stopping the mill. After this declaration, Mr *R. r. r.* will hardly suppose that I will accept of his bet of a rump and dozen; but I should be very glad to give him a beef steak and a bottle of port, should he come my way; and I am almost tempted to put my name, and place of abode, that he might know where to find me; but observing that there is some danger in appearing *in print*, I must for the present decline it. As to Mr Farey, he writes like a man of science, who is perfectly master of his subject. The *words* which he objects to of mine, viz. that the nearer the end of the start can be brought to the machinery, the more purchase the horse will have, are, I acknowledge, very *ill expressed*, or, if he pleases, *nonsense*; for all I meant was, the *longer* the lever, the more the power, which every body knows; but people writing too carelessly will commit inaccuracies. I should be glad to know where Mr Salmon's Instructions for Building in *Pisé*, are to be met with; whether he has published on the subject, or if application must be made to him personally. I am afraid I trespass too much on your time; but, before I conclude, I wish Mr Farey, or some ingenious person, would fall on some contrivance, to be attached to a thrashing mill, or fanners, for *hummelling* barley; for I find as much trouble in beating barley, after it passes a small thrashing machine, as there is in thrashing it from the straw. With my best wishes for the success of your very useful work, I remain, Sir, your constant reader and very humble servant,

July 5th 1805. T—t.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

On the Advantages which follow the Enclosing of Land.

SIR,

In volume V, page 292, it is remarked by a correspondent, that much money has been expended needlessly in enclosing land; and a wish is expressed to know, whether it is the interest of proprietors and occupiers to enclose a district, naturally adapted to the growth of corn, with hedges or stone walls.

Perhaps few subjects have occasioned greater altercation than that of Enclosures; which have been strongly reprobated by some, and keenly recommended by others, from the earliest dawn of improvements in modern agriculture. I have learned that the English Legislature, so long ago as the protectorate of Edward

Duke

Duke of Somerset, on account of popular objections, not only put a stop to the enclosing of land, but also ordained all the new enclosures to be thrown open; though it is remarkable that Mr Fitzherbert (a judge of the Common Pleas, who flourished in the reign of Henry the Eighth, and practised the art of agriculture forty years), published in 1534 his sentiments in favour of enclosing. He speaks of land worth sixpence the acre before it was enclosed, that would be worth eightpence afterwards, which, in point of good sense and judgment, does not suffer in comparison with our modern authors, who have written so much on the same subject. But whatever may have been the difference of the opinion of the people in general, or the doubts that may have arisen in the British Senate in those misty times, they were long ago removed; and the numerous acts that have latterly taken place to enclose, sufficiently shew us what is the sense of the Legislature at this time. Therefore, it seems rather strange to me, how any person possessed of experience in agriculture can now entertain any doubt of the propriety of enclosing lands, particularly those of the best quality, which are principally pointed at. A man of little discernment may easily conceive the impropriety of attempting to divide extensive muir or hill land adapted for cattle and sheep pasture, into enclosures of any size; but I am confident that, in many instances, ring fences would be of much benefit to the occupiers, which I shall not enlarge upon at present. In short, my opinion is, that the better the land, and the more adapted to the growth of corn, the greater are the advantages of enclosing; it is of more value, and will reimburse the expences sooner, and with more certainty, than that of inferior quality; and if it was no more but for the conveniency that every farmer will find in resting occasionally part of his land in grass, it is worth while to enclose it.

There are still other advantages that might be mentioned. It may be asked, do not enclosures save occupiers the charge of two or three herdsmen, more or less, according to the extent of the farm? At any rate, from experience I can affirm, that herdsmen are not always to be depended upon; for it too often happens that, through their neglect or inattention, or the wantonness of the cattle themselves, the new sown wheats and young grasses, &c. are most abominably abused where there are no enclosures, or where they are in bad order, the effects of which, in some cases, may be felt for many years; because, in wet weather, and where the soil inclines to clay, it not only does much hurt to the crop for the time being, but sours the land, and makes it unfit to bear such a good crop the following year; if intended

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for pasture grass, it is so much the worse. Besides, in the case of a farm not being enclosed, of the quality alluded to, what must be done with the live stock in summer? Must they be all housed, or put into the farm-yard at night, or left at large during the night-time? or does the querist imagine it possible that a farm of any great extent, particularly at a distance from dung and lime, can, in any point of view, be advantageously managed without pasture grass?

There is another benefit gained from enclosing land adapted to the growth of corn; but, before I proceed farther, it may be remarked, that enclosures, in general, should not contain less than from fifteen to thirty acres each, provided the size of the farm will admit, the reverse of which is too much the case in some places, particularly in Ireland, where the rage for enclosing seems at one time or other to have been considered as the sole improvement necessary; because, without regard to naturally dry or wet soils, many of their enclosures do not contain more than two acres, and some not near so much, which causes a great waste of ground; more particularly, as the fences are generally kept in wretched order. Where it is necessary to intersect farms with open drains or ditches, for the purpose of clearing off rain water, enclosing with hedge and ditch, judiciously done, not only answers the purposes enumerated, but serves to keep the cattle from passing over them, and treading in their sides; however, where the grounds are of a good dry soil, I approve most of stone fences, because they occasion less waste of land, and the crops upon the ridges next them are not injured, as is commonly the case upon those adjoining hedgerows, from the extension of their roots: therefore, although most expensive in the first instance, they are ultimately most beneficial: at any rate, no argument can be advanced sufficient to disprove the utility of both or either of these kinds of fences, particularly when they are properly made upon the soils they are respectively suited to answer, provided they are kept in good repair. Upon the whole, it may be averred, that as hedges can be planted at no great expence, and as the weighty part of materials for building can, in most cases, be got near at hand, both proprietors and occupiers must be benefited by enclosing; though it is unnecessary for me to offer any minute calculations of the probable expences of making such fences, and the time in which such expences will be reimbursed. These things shall be left to persons who entertain doubts upon the subject; though, I believe, it will be a difficult task to prove, that the expence of enclosing equals or comes near to the benefit thereby gained. I am always at your service,

East Lothian, 25th October 1804. T. B.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

SIR,

IN England, where the practice of irrigation is carried on extenſively, it often happens, that leſs advantage is derived by thoſe who undertake ſuch an improvement, than circumſtances would have led them to expect. This comparative failure may, in many inſtances, be attributed to want of experience in thoſe concerned, and to the imperfectneſs of the plan adopted for carrying the different operations into execution. There is little doubt but that the worſt land in the kingdom may, by irrigating it properly, be rendered three times more valuable than it is; whilſt, at the ſame time, it is as certain, that if due precaution is not beſtowed, much miſchief may follow. Should the operations be commenced without previouſly uſing the requiſite ſteps in the formation of the meadow, inſtead of making an improvement, the land will be damaged, and a heavy expence incurred.

My preſent deſign, therefore, is to deſcribe and recommend the plan practiſed by the greateſt irrigator in the kingdom, (Mr Charles Stephen), and who, I believe, has had more practice, and laid out more land, in this way, than any other man in Europe.

1. He carefully inſpects the piece of land which is to be irrigated, conſiders what drainage may be neceſſary, and how the ſame may be moſt advantageouſly performed; as, in ſome ſituations, the drains neceſſary for irrigation may be ſo planned, if proper attention is given, as to ſerve for the land alſo; and, in other ſituations, the maſter-feeder, with the additional expence of the thorns, and trouble of planting them, may be rendered a good fence. If due attention is not paid to the article of drainage in the formation of a meadow, little advantage can be expected from the undertaking; for the ground will continue wet and ſpongy, and the graſs, of courſe, be thin and weak.

2. His attention is next directed to the courſe of the river whence the meadow is to be ſupplied, and to the moſt proper places for the erection of floodgates where neceſſary. The gates ſhould be made of the beſt oak, and the whole of the maſon work ſhould conſiſt of hewn ſtone. Floodgates conſtructed in this manner, and properly managed afterwards, will laſt for ages.

3. He now proceeds to take the neceſſary levels, being convinced that he cannot move one ſtep farther with advantage, till he has fixed upon the particular ſpot where each feeder is to be. This being aſcertained, the workmen are directed to commence

their

their operations. The maſter-feeder and maſter-drain are firſt caſt; as, when theſe are executed, he ſees better how to conduct the leſſer ones.

4. The breadth of the beds is the next thing that claims his attention, and, in the conſtruction of them, he takes into conſideration the form of the land, and the quality of the water. Where the land is flat, thirty-ſeven feet eight inches is conſidered as a proper breadth. Allowing twenty inches for the feeder, there will remain eighteen feet clear on each ſide of it, lying parallel with the drains; but if the ground is in a convex form, or if the water contains any calcareous ſubſtances, ſuch as lime, marl, and the runnings of a town, the beds may be enlarged even to forty-two feet, which, in general, is reckoned a good medium breadth. It is ſafer, however, to keep within, than to exceed that extent; for allowing, in the firſt caſe, that the part of the bed neareſt to the feeder receives more benefit than that neareſt the drain, (becauſe the farther the water runs the worſe it becomes), yet this is not ſo great an evil as is experienced in the latter caſe, where the water runs too haſtily off, without depoſiting a proper quantity of ſediment. The rate of declivity from the feeder to the drain, found to be moſt advantageous, is one inch in the yard. The bank on the back of the feeder, is formed with the earth which comes out of it, and, if more is neceſſary, recourſe is had to that which is caſt out of the drain.

If the meadow conſiſt of ſeveral pieces, which is often the caſe, one part ſhould be got ready firſt, and the water put on it, whilſt the reſt are preparing.

I was going to point out the method of irrigating, and managing the water during the flooding ſeaſon; but, as I am uncertain about the fate of what I have already written, ſhall go no further at preſent. I am yours, &c.

A Lover of Irrigation.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

On the Selection of Grain for Seed, and the Advantages which would ariſe from having a Farm or Farms ſet apart for the raiſing new Varieties.

Sir,

Few ſubjects, of greater importance to the growers of corn, have been diſcuſſed in your Magazine, than *the ſelection of grain for ſeed;* and it was with much pleaſure I peruſed ſome excellent hints on that buſineſs, in the opening paper of this volume, by a gentleman who ſigns himſelf *Miſo-Mixis.* Indeed, I am ſo fully ſatisfied concerning the extent of the benefit that might be derived,

derived, were none but the pureſt and foundeſt grain ſown, that I take the liberty of ſubmitting to your conſideration, a few thoughts on the beſt mode of providing the public with a regular and conſtant ſupply of 'pure and unblended varieties of the different ſorts of grain and roots, adapted to the climate and ſoil of the Britiſh iſles.'

In the majority of corn farms, the operations to be executed are ſo numerous and complicated, as to prevent farmers, in ordinary caſes, from beſtowing that ſedulous attention which the *breeding of grain* requires; and it often happens, that the genius or diſpoſition is imperfectly calculated for carrying forward a ſeries of proceſſes, which require much judgement and diſcrimination at the outſet, and great attention in every ſtage, till a concluſion is reached. Hence it appears, that if we wiſh to ſelect and cultivate new varieties of ſeed, or bring thoſe to perfection with which we are already acquainted, it would be proper that particular farms were devoted, or ſet apart entirely to theſe purpoſes. A breeding farm of this kind, in the hands of a ſkilful and ſteady perſon, is a deſideratum in huſbandry. We ſee the benefits that have been gained by ſelecting and breeding from the moſt approved and beſt formed ſpecies of live ſtock; and, were the like care uſed to ſelect and cultivate the largeſt and beſt ſhaped grain, there is no doubt but a benefit of ſtill greater extent would be obtained by the corn farmer. In my humble opinion, an eſtabliſhment, or eſtabliſhments of this nature, would not only prove of great utility to the public, but alſo be eminently beneficial to thoſe who undertook them. The difference of increaſe, and the intrinſic value of the grain produced from good and bad ſeed, or in caſes where the particular ſpecies has degenerated, is ſo great, that, unqueſtionably, every cultivator, of the leaſt ſenſe or diſcernment, would reſort annually to ſuch breeding ſeminaries, with the ſame avidity as is diſplayed by the breeders of ſheep when they attend the tup-ſhews.

I am well aware that ſeveral farmers, much to their credit, do already beſtow a good deal of attention on the ſelection and culture of the moſt improved varieties of grain, and that much benefit has been derived from their efforts. To one or two active and enterpriſing perſons in Eaſt Lothian, the public are indebted for the beſt variety of thin-chaffed wheat which is to be found, ſo far as my knowledge reaches, in Great Britain; and, from their perſeverance, we may juſtly expect that freſh ſupplies of pure and unblended ſeed will be provided to others, who want either leiſure or capacity to breed for themſelves. It is obvious, however, that ſuch ſelections as I have alluded to, muſt neceſſarily be made on a limited ſcale: at any rate, there

there is a hazard that other avocations may interfere, and prevent them from being completely ſucceſsful. Be this as it may, it is plain, that where the attention is entirely confined to one object, ſucceſs may be more confidently expected, than when divided, in a multifarious manner, or directed to different objects.

It alſo deſerves notice, that the fineſt, and beſt variety of grain will degenerate, and fall off in a few years, unleſs freſh ſelections are conſtantly made of the moſt approved ſtalks, from which, only, a new ſeries ſhould be reared. Had not the potato oat been introduced a few years ago, Scotland ſtood a great chance of being ſoon as badly ſupplied with oats as our ſiſter country, where a ſample of good quality is rarely to be got, except of the Poliſh or barleycorn variety. In point of real value it is demonſtrable, that potato oats, on good ſoil, exceed thoſe ordinarily cultivated, by at leaſt twenty ſhillings per acre; therefore, their introduction may be regarded as of immenſe importance to the country. There is cauſe, however, to apprehend, that the ſuperior excellence of this variety will ſoon be loſt, unleſs freſh ſelections are made; for already a conſiderable inclination to degenerate has been witneſſed. The origin of theſe oats cannot be ſatisfactorily traced, but I have often thought they were derived from the variety called *Early Eſſex*; or at leaſt ſelected from ſome principal ſtalks of that variety.

The importance and utility of devoting particular farms to the breeding of corn, receives additional ſupport from the modern improvements made in the like way and manner upon live ſtock. According to the principles, or rather the practice, of many corn farmers, it is ſufficient to ſow ſeed, without troubling yourſelf whether it is pure and unblended or not, and without caring more than that it is of the ſpecies you want to cultivate. The wiſdom of ſuch people, is equally profound with that of breeders of a different kind, who take their cow to the bull, for no better reaſon, than that he is able to procreate a calf; or put a tup to their ewes, merely becauſe he is of the maſculine gender. No doubt ſuch people may have their calf and their lamb, but they have no reaſon to expect that either of them will be handſome and well-ſhaped. In like manner, the farmer who neglects to ſelect his ſeed-corn, and to chooſe the pureſt and moſt unblended grain, will always reap a crop inferior in value to what might have been obtained had he paid attention to theſe circumſtances.

In ſhort, a careful attention to the ſelection of grain for ſeed, may be conſidered as one of the moſt important duties which appertain to the character of a good huſbandman. Indeed, that the beſt of grain ſhould be reſerved for ſeed, ſeems to have been long

long an eſtabliſhed principle in this country; for when rent was paid in kind, it was either tacitly or expreſsly underſtood, that the tenant had a right of ſelecting ſuch a quantity as was neceſſary for the ſucceeding year's ſeed. Though the weightieſt and ſoundeſt grain was in this way retained, and, abſtractedly conſidered, ſuch muſt always produce the ſtrongeſt plants, yet it is more than probable, that little care was ſhewn to ſelect new varieties, or breed from the largeſt and moſt prolific ſtalks. Theſe practices may, therefore, be conſidered as modern improvements, and as yet in an infantine ſtate, though advancing faſt forward to maturity. That their progreſs would be accelerated, by eſtabliſhing breeding farms, will hardly be diſputed; and theſe hints are thrown out, with a view that the ſubject may be taken up by ſome other of your correſpondents, of more extenſive information, and poſſeſſing greater knowledge of botany, than your obedient humble ſervant,

A FRIEND TO IMPROVEMENTS.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Eſſay upon the too great Extent of Paper Circulation in Great Britain in general, but more particularly in Scotland.

SIR,

ALTHOUGH the following Eſſay may be ſaid not properly to belong to an agricultural ſubject, yet, as it is nearly connected with its principal intereſts, I truſt it will not be conſidered foreign to the deſign of your uſeful publication.

I ſhall therefore, without further preamble, ſtate it as an axiom, univerſally admitted of, that the paper circulation of this kingdom is vaſtly too much extended, conſidering that the public at large have no further ſecurity from individuals, who chooſe to *paſs*, or rather *palm*, their bank-notes upon them, than the popular opinion entertained of their reſpective credits. Here, a queſtion naturally ariſes, How can this evil be properly remedied? Two ways preſent themſelves, to ſuit the object of *ſtamping* a degree of greater ſecurity upon ſuch bank-notes as may be iſſued.

The firſt of theſe modes, indeed, would require the interference of Parliament to paſs a bill, obliging every private banker, iſſuing ſuch notes, to lodge good ſecurities to the extent of two-thirds of his intended circulation, and levying alſo a heavy penalty from any one exceeding ſuch circulation; as alſo, on being convicted of ſuch delinquency, the party offending to be, *ipſo facto*, deprived of the power of iſſuing bank notes thereafter.

A plan ſimilar to this was, I believe, brought forward in Parliament

liament many years ago, by a gentleman of the firſt repute in the mercantile world in London;—unfortunately, however, for the country it fell to the ground.

The ſecond mode (which, indeed, I ſhould much prefer) would be for the legiſlature to allow of no other than the Bank of England notes to be iſſued in circulation in South Britain, with branches thereof to be ſettled in the different large trading cities throughout the kingdom, for the interior circulation and convenience of trade. The ſame plan to be adopted reſpecting Scotland, confining its circulation to the Royal and Old Banks, and Britiſh Linen Company, and branches reſpectively belonging thereto.

Perhaps this limited reſtriction of the circulation of Great Britain *ſolely* to the banks above mentioned, might be deemed a kind of monopoly *legally* veſted in the hands of a few, which, if not conducted upon liberal principles, might be unequal to the full extent of circulation requiſite for the country; yet I ſhould think that the managers and directors of ſuch banks, taſting the ſweets of excluſive profit, would not fail to erect branches in proper ſituations adequate to a full circulation. At all events, I ſhould deem it a wiſe, juſt, and neceſſary ſtep in the legiſlature not to allow any private bank notes to be iſſued, without the parties finding an ample ſecurity for the probable indemnification of the public.

I am fully aware of the hue and cry which would be raiſed againſt the adoption of any of theſe meaſures, as cramping commerce, and repugnant to the intereſts of this free country. I, for my own part, however, hold a different language, and ſhould deem the adoption of ſuch, or ſimilar meaſures, as ſubſtantially tending to ſupport the commerce and public credit of Great Britain.

No doubt the erection and failure of the Douglas and Heron bank muſt be in the recollection of many of your readers. And although it muſt be confeſſed, that the wide extended circulation, and unlimited credit given by the directors of that *ſtrangely conducted* company, did ſome partial ſervice to the commerce and agriculture of the country; yet, although its failure happened above 30 years ago, there ſtill exiſts, at this preſent moment, a certain degree of *undulation*, created by the violent *concuſſion* of this *commercial earthquake*, which ſhook the public credit of Scotland to the very *baſis* of its *foundations*.

It were needleſs to enumerate the inſtances we have of private bankers becoming bankrupts, and afterwards living luxuriouſly with their families, whilſt the creditor is fobbed off with a dividend of 2s. or 3s. in the pound. Here the chicanery of the law intervenes, to ſcreen fraud and injuſtice; for the bankrupt, by previouſly

viouſly ſettling any hereditary or acquired property upon truſtees for the proviſion of a wife and family, thus ſecures to himſelf the comforts, perhaps elegances of life, whilſt the poor creditor is left to rot on a *dunghill*.

Surely, if the iron hand of juſtice calls for the life of a needy wretch, who, in an ill fated hour, has *forged* his neighbour's name, though, perhaps, urged thereto by dire neceſſity;—by a moral parity of reaſoning, the torture ſhould be applied to him who *frames* and *conducts* buſineſs in the manner above alluded to, and thus *openly*, *wantonly*, and *inſolently* mocks at the ſufferings of his fellow brethren, and defrauds a generous and unſuſpecting public.

Much, of late years, has been talked of a *tree of liberty*; but if ever it ſhould rear its head in this quarter of the world, I confidently truſt that the common ſenſe of the inhabitants would ſoon lay the axe to its *baneful root*. Not ſo, however, ought we to deal with the *tree of public credit*, which ſhould be piouſly foſtered with the ſame religious ardour that the Indian bramin pays to his beloved *banian tree* while repoſing under its venerable ſhade. And ſtill to carry on the metaphor;—as it is well known in natural hiſtory, that the *branches* of this wonderful *tree* droop towards the ground, which (when they unite with) again take root, and ſo form a part of the family of the original trunk; thus the *branches* of the *tree* of *public credit* would ſoon find out the ſoil congenial to their nature, there take root, and ſpread their umbrageous ſhade, to the beauty and advantage of their reſpectable grandſire, and the great benefit of the weary traveller.

And, although we could not boaſt of having the Indian *bramin* to ſolace himſelf under the ſhade, yet (to be allowed a Scotiſh pun) we ſhould thus tranſplant *braw mines* of wealth into the bowels of our country. I am, Sir, your very humble ſervant,

A Country Gentleman.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Account of the Wood Plantations at New-Abbey in the Stewartry of Kirkcudbright.

Sir,

When I had the pleaſure of waiting on you lately, the improvements of my predeceſſors became the ſubject of converſation. As you expreſſed a deſire to receive a more particular detail of them than was at that time in my power to give, I wrote to my father's wood-foreſter, who was concerned in making theſe improvements; and I now encloſe you his ſtatement, which may be preſented to the readers of the Magazine, in caſe you think

think it merits inſertion. And I am, Sir, your moſt obedient ſervant,

C. STEWART, *Capt. 21ſt Militia.*

Haddington Barracks, 26th April 1805.

LETTER TO CAPTAIN STEWART.

SIR, *New-Abbey, 9th April* 1805.

MY ſon received your letter, dated the 27th ult., and, as deſired, I now give a circumſtantial detail of the wood plantations on Shambelly-hill, which I aſſiſted in executing.

In the year 1752, your grandfather encloſed four acres, which were planted with oak, aſh, and common fir; and, in 1792, I began to cut the latter from amongſt the hard wood, at which time the trees meaſured from five to twenty feet of timber each. The weeding of that lot was finiſhed in 1800, and produced about 60l. per acre, beſides a conſiderable number of ſmall trees which were ſold, when very young, at ſuch prices as they would bring. A tolerable crop of oaks is left, though not ſo good as might have been gained, had the firs been wed out ſooner from amongſt them. Thoſe which got air in time are now worth 1l. each.

Five years after forming the firſt plantation, a ſecond was made, conſiſting of two acres of common firs, for which your father refuſed 200l. Sterling per acre, and deſired me to cut and ſell them to the country, according to the demand that appeared; which I am at preſent doing. There are 425 trees on the acre, meaſuring about eleven feet each, which ſell at 15d. per foot, conſequently, the value thereof is 250l. per acre, or thereby.

A third plantation of 26 acres of common firs, with a few oak and aſh trees, was executed in the year 1765; but the firs being too cloſe on the ground choked moſt of the hard timber. The firs are now weeding for the Engliſh market, where, I am convinced, they will produce fully 100l. per acre. This plantation lies on high ground.

In 1772, a fourth plantation of 28 acres was made under the direction of your father, ſome of which with oak and common and larix fir; part with aſh and common fir, and the reſt with beech and fir. For ten years paſt we have been weeding the firs, which contain from four to five feet of timber in each tree, and produce fully 40l. per acre at the Engliſh market. The oaks which remain are worth 50l. per acre. The beech is very thriving; but the aſh was by no means ſo, till cut over about three years ago, which produced an aſtoniſhing change.

During the ſeven ſucceeding years, your father planted above 200 acres with oak, aſh, and common and larix fir. A few of the firs are taken out, which meaſure from three to four feet;

and

and you know we have a tolerable good ſale for them at the coal-works on the Engliſh ſide of the water. The whole hill, which contains nearly 300 acres, was conſidered to be worth only 15l. *per annum* before it was planted. I was originally tenant of part of it. The ſoil is moſtly good and dry, though one half of it was covered with large ſtones.

We generally plant from 1500 to 3000 of different ſorts of trees per acre, two thirds of which are common and larix fir; the remainder oak and aſh, with ſome birch and alder where the ground is wet. I raiſed moſt of the plants from ſeed, ſo that your father had few to buy; and it is conſiſtent with my knowledge, that the expence of encloſing the hill, and executing the ſeveral plantations, did not exceed 400l. altogether. I remember of our getting, in 1765, a quantity of acorns from London, at the trifling expence of 40s., which produced above 150,000 plants.

Laſt winter your father encloſed 12 acres of more ground, on which were planted 10,000 oaks, 8000 common, and 7000 larix firs, 400 elms, and 400 birches, and next winter he propoſes to encloſe and plant 12 acres more. There is of natural oak wood upon the eſtate about 20 acres, which I have ſeen cut three different times in the courſe of the laſt 40 years, and which has paid the family about 2000l. Some of the trees contain from 26 to 50 feet of wood; and one tree, to my certain knowledge, yielded a ton of bark. I may alſo mention, that three acres of common firs, planted by your great grandfather, which I cut and ſold in the year 1773, produced, in ſeveral inſtances, not leſs than 40 feet of timber, being then betwixt 50 and 60 years of age.

I have now given the particulars requeſted; and will be extremely happy to communicate ſuch farther information as may be neceſſary, or in my power to give. I am, &c.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

On the Nature, Improvement, and Qualities of the different Soils proper for rearing Sheep.

(Continued from Vol. V. p. 433.)

LETTER III.

SIR,

HAVING, in my two former letters, deſcribed, at conſiderable length, the nature and properties of the principal plants produced on a moſs ſoil, it remains now only to ſhow at what particular ſeaſon of the year, and by ſheep of what age, they can be moſt advantageouſly depaſtured.

As the conſtitutions of ſheep are formed, in a great meaſure, from the nature of the ſoil on which they are bred, too much

care cannot be taken to provide them with ſound healthy paſture, ſo long as they are in an immature ſtate, particularly during the firſt year, as it is well aſcertained from experience, that hogs reared on a healthy ſoil do not eaſily loſe their inherent good qualities afterwards. Lambs, when intended to be kept as a ſeparate hirſel, may be allowed to lye, for ten or twelve days after weaning, on clean graſſy paſture, to prevent over-fatiguing them in ſearch of food; but, after that time, they ſhould be kept for one or two months, as circumſtances may permit, on ſuch ſorts of herbage as tend moſt to brace the ſyſtem, and purify the blood. Heath, ſtool-bent, and ling, ſeem to poſſeſs theſe qualities in an eminent degree, being of a healthy and hardy nature, uniformly reſiſting the 'firmeſt ſhocks' of the ſevereſt ſeaſons. The temporary decay which ſome of them undergo, proceeds not from any inherent delicacy in the plant, ſubjecting it to the influence of external cauſes, but is perfectly natural to it at a certain period. Deer-hair, for example, remains green only for a few months, and then fades; the periods aſſigned by nature for its growth, maturity, and decay, being tenaciouſly adhered to, without regard to the ſtate of the weather; and it is well known, that before the period of decay arrives, the ſevereſt blaſts have little or no effect upon it. With regard to the healthy qualities of theſe plants, experience bears ample teſtimony. It is an axiom in ſheep-farming, that the cloſer graſs is eaten, the more is the flock expoſed to ſuffer by diſeaſe; and it holds univerſally as to the more ſucculent graſſes. With regard, however, to the plants in queſtion, the rule ſeems to be reverſed; for, in them, the part of the ſtem or ſtalk neareſt the root is the moſt nutritive and healthy; and, on this account, ſpring-burning is practiſed, as, by means of it, not only the old decayed herbage is cleared away, which might hinder a freſh ſpringing, or, if eaten, perhaps injure the powers of digeſtion, but eaſy acceſs is alſo gained to the moſt valuable part of the food.

Seeing that moſs ſoils abound with plants poſſeſſed of ſuch beneficial qualities, it may excite ſupriſe that lambs are not always kept upon them during ſummer. Where local circumſtances allow, the practice generally prevails; but, in ſome places, it would be attended with pernicious conſequences to the reſt of the flock, by preventing them from lying ſo much at eaſe as they would otherwiſe do; and, in others, it cannot be attempted, from the ſmall extent of ſoil of that deſcription. Lambs bred upon moſſes may not be ſo fleſhy as thoſe reared on more graſſy paſture; but as the blood is pure, and the conſtitution good, diſeaſe is in a great meaſure prevented. It is alleged by ſome, that as moſs graſſes are generally of an aſtringent nature, they, of courſe, conſiderably contract the paſſages through the entrails, and thereby

tend

tend to produce ſuch ſtoppages as generally terminate in *the ſickneſs*, when the animal is allowed to fill its belly with more ſucculent food. The obſervation is not altogether groundleſs; but the danger dreaded may be eaſily avoided, by allowing lambs to feed for three or four hours every day on more nutritive paſture, thereby accuſtoming them to every kind of food; as is the practice of the moſt experienced ſheep-breeders. If, after ſuch treatment, bad conſequences enſue, they may be ſuppoſed to proceed from other cauſes than the quality of the food on which the ſheep were bred; and, of theſe, unneceſſary *dogging* may be conſidered as chief. Broken bones are often the conſequence of this abſurd practice; and when this does not happen, the ignorant and imprudent ſhepherd imagines all is well; never conſidering, that, by overheating the animal, an impure tincture is communicated to the blood, and a more active impulſe given to the latent ſeeds of diſeaſe, eſpecially to thoſe of that potent malady, the *ſickneſs*. Lambs, above every other kind of ſheep, are particularly fond of deer-hair; and, during the months of July and Auguſt, will thrive upon it amazingly; but as a conſiderable quantity of more nutritive food is neceſſary to put them in good condition before winter ſets in, they ſhould be gradually habituated to a more graſſy paſture, which will prevent the bad conſequences of a too haſty tranſition, and enable them to bear out the trying ſeverity of a mountainous climate.

On paſtures of the foregoing deſcription, hogs will thrive equally well as lambs. They may be put upon them by the beginning or middle of May, and continued to the middle of Autumn; whereas lambs cannot enter before the middle of July. The copious rains which generally take place in autumn, render ſuch ſoils unhealthy as a fixed or continued paſture, though they may occaſionally be of great uſe to ſheep of all deſcriptions, when the weather admits of acceſs to them. Ewes, when giving ſuck, ſhould indeed, for reaſons already noticed, be left to the choice of their food; but when the lambs are removed, they may alſo with ſafety be kept upon them for ſome time, if circumſtances ſo require.

As the texture of the body depends in a great meaſure upon the nature and quality of the food on which the animal lives, ſurely that kind which is moſt productive of ſtrength and hardineſs muſt be doubly beneficial at the time when it advances faſteſt in growth. Now, as the plants I have been deſcribing poſſeſs this quality in an eminent degree, they muſt be conſidered as particularly advantageous to young ſheep, or thoſe in a growing ſtate; and there is reaſon to think, that the different ſeaſons of the year, during which I have recommended their uſe, will, upon trial, be found the moſt proper. I may perhaps be conſider-

ed as pleading for the antiquated cuſtom of keeping ſheep of different ages by themſelves on the ſame farm, but nothing is farther from my ſentiments. I am a keen advocate for freedom in the domains of inſtinct, as well as in thoſe of reaſon; and ſcruple not to aſſert, that the ſame inſtinctive impulſe which directs the lamb, only a few minutes old, to apply, without heſitation, to the individual part of its parent's body from which only it can derive nouriſhment, will when ripened by experience, continue to guide it in ſearch of ſuch food as nature intended for its ſupport; and which, growing ſpontaneouſly upon the mountains, is as much adapted to its conſtitution, being a native of them, as the fineſt artificial graſſes are to the lamb bred upon them. However favourable circumſtances may ſometimes be to induce a changing from place to place, yet, as ſheep always manifeſt an attachment to their native ſoil, it is impoſſible they can enjoy the ſame eaſe, and lye with equal compoſure on any paſture, as on that to which they were originally habituated. It muſt however be confeſſed, that no general rule can be laid down, that is not liable to exceptions. Local ſituation muſt always be taken into account; but, where there is much high-lying, coarſe ground, it is certainly prudent to depaſture it with hogs and lambs; for, if this is not done, ſuch paſture will in a great meaſure be loſt, as the beſt time of the ſeaſon elapſes before ewes can be in a proper ſtate to be kept upon it.

I am, &c. S. L.

An Act to explain and amend an Act, made in the laſt Seſſion of Parliament, to regulate the Importation and Exportation of Corn, and the Bounties and Duties payable thereon. [10*th July* 1805.]

WHEREAS an act paſſed in the laſt ſeſſion of Parliament, intituled, *An Act to regulate the Importation and Exportation of Corn, and the Bounties and Duties payable thereon*: And whereas it is expedient that ſome of the proviſions of the ſaid act, as to the regulating the importation and exportation by the average taken as in the ſaid act is directed ſhould be repealed, and others thereof amended: May it therefore pleaſe your Majeſty that it may be enacted; and be it enacted by the King's moſt excellent Majeſty, by and with the advice and conſent of the Lords Spiritual and Temporal, and Commons, in this preſent Parliament aſſembled, and by the authority of the ſame, That, from and after the 15th day of Auguſt 1805, ſo much of the ſaid act as requires that the importation and exportation of corn, grain, malt, meal, flour, and biſcuit,

biſcuit, into and from England and Wales, and into and from Scotland, ſhall be regulated, as to England and Wales, by the average prices of the whole of the twelve maritime diſtricts thereof, and as to Scotland, by the average prices of the whole of the four diſtricts in Scotland, ſhall be, and the ſame is hereby repealed; and from the ſaid 15th day of Auguſt 1805, the importation and exportation of corn, grain, malt, meal, flour, and biſcuit, into and from every part of Great Britain, ſhall be regulated by the aggregate average price of the whole of the twelve maritime diſtricts of England and Wales in the ſaid act mentioned; ſuch average price to be aſcertained from ſuch returns, and in ſuch manner, as is directed by an act paſſed in the 31ſt year of the reign of his preſent Majeſty, intituled, *An Act for regulating the Importation and Exportation of Corn, and the Payment of the Duty on Foreign Corn imported, and of the Bounty on Britiſh Corn exported*; and by another act paſſed in the 33d year of the reign of his preſent Majeſty, intituled, *An Act to amend an Act made in the 31ſt Year of the Reign of his preſent Majeſty, intituled, 'An Act for regulating the Importation and Exportation of Corn, and the Payment of the Duty on Foreign Corn Imported, and of the Bounty on Britiſh Corn Exported,'* for aſcertaining the average prices of corn, grain, meal, and flour.

II. And be it nevertheleſs further enacted, That no corn, grain, malt, or flour, ſhall, after the commencement of this act, be allowed to be exported from any diſtrict of Great Britain, or be loaden on board any ſhip, veſſel, or boat, in order to be exported when the prices of ſuch corn or grain reſpectively, in ſuch diſtrict, aſcertained in manner aforeſaid, ſhall have been in the preceding week at or above the import rates.

III. And whereas it is expedient that the period for which permiſſions by Orders in Council to import corn, meal, or flour, now by law continue in force, ſhould be extended as to all corn, meal, or flour imported under any ſuch permiſſion from Quebec or the other Britiſh colonies and plantations in North America; Be it therefore enacted, That, from and after the paſſing of this act, every permiſſion granted by any Order in Council under the ſaid recited acts of the thirty-firſt and thirty-third years of his Majeſty's reign reſpectively, or either of them, for the importation of any ſort of corn, meal, or flour, from Quebec or the other Britiſh colonies and plantations in North America, ſhall continue in force for ſix months at the leaſt, from the date of the Order in Council made for that purpoſe; any thing in any former act or acts to the contrary notwithſtanding.

FOR THE FARMER'S MAGAZINE.

Statement of Particulars reſpecting Cattle fed on Clover and Tares at Markle, Eaſt Lothian, 1805.

THE ſoiling of horſes on clover and rye-graſs is an eſtabliſhed practice in almoſt every corn diſtrict; and the advantages which accompany that mode of ſupporting the working ſtock, have long been completely aſcertained. In the 5th Volume of this work, page 169, it was recommended to feed cattle in a ſimilar way during the ſummer months; and the benefits which would thereby be gained, namely, an economical uſe of graſs, and an augmentation of dung, were pointed out; but, though the reaſoning was plauſible, it remained to be aſcertained by actual experiment, whether cattle could be fattened in that way for the butcher; and, if they could be fattened, the degree of profit which would thereby be produced.

In Flanders, and ſome parts of America, cattle are uſually kept in the houſe, and fed on cut graſs through the ſummer ſeaſon; but, to the beſt of my knowledge, no regular attempt had hitherto been made in North Britain to fatten cattle in this manner, though milch cows, in ſeveral inſtances, have been either partially or wholly ſupported upon ſuch food. I have been in the habit, for many years, of keeping cows on cut graſs; and arguing, by analogy, that what gave butter, would not fail to produce tallow, the inference which naturally followed was, that the practice might ſafely be extended to horned cattle of every deſcription. Laſt ſummer I made the attempt on a ſcale large enough for a firſt one; and mean, at this time, to detail the particulars.

Having purchaſed, October 1804, at Falkirk tryſt, 48 Aberdeenſhire ſtots, moſtly of a full age, which were wintered in the farm yard, they were divided by a friend, on the 4th of May 1805, into two lots, when one lot was put to graſs, and the other into the farm yard, where they got a taſting of ruta baga in addition to their uſual fare of ſtraw, till my clover field was fit for cutting. Before the diviſion, a few turnips had been given to 30 of the beſt and largeſt cattle in a ſeparate court; but, as that parcel was equally divided previous to the remaining 18 being examined, the reſult is not thereby affected, eſpecially as the turnips and ruta baga are charged againſt the clover-fed cattle in the after ſtatement.

On the 1ſt of June I began to cut clover, which was given to the cattle in troughs and cribs; though, for a week at leaſt, to ſave danger, the quantity given was much leſs than they could have conſumed. After that time, a full ſupply was allowed,

lowed, and the offal or waſte furniſhed maintenance for a large parcel of ſwine of different ages. Till the graſs got hard and withered, the cattle, in general, after the firſt fortnight, throve amazingly well, particularly thoſe who had got a few turnips in March and April. Exceptions there were, even amongſt them; for the ſtrongeſt and boldeſt cattle generally took poſſeſſion of the cribs, and would not reſign them till their appetite was ſatisfied. This evil muſt neceſſarily happen where any conſiderable number are kept together, and can only be avoided by having ſeveral courts or feeding places, and ſelecting the cattle for each, according to ſize and diſpoſition.

About the end of July, when the graſs was fully ripened, I changed food, and gave tares which were ſown in March; and continued this article till the ſecond crop of clover was ready for the ſcythe. On the 28th Auguſt, 10 of the *tops* were ſold, which enabled me to do more juſtice to thoſe who had hitherto been ſecond in hand. On the 24th September, the remainder were diſpoſed of; though, unfortunately, one of them died of a ſurfeit on the preceding day, which reduced the account of profits nearly at the rate of 10 *per cent.*

It ſhould have been mentioned, that the farm yard, or *courtine*, was regularly littered with ſtraw, which occaſioned much dung, and that of excellent quality, to be collected. A plentiful ſupply of water was alſo at hand; and the cattle repoſed, during the heat of the day, in open ſheds around the yard, much more comfortably than they could have done in any field whatever. I mention this circumſtance, becauſe ſeveral dealers ſagaciouſly concluded, that the confined air of the court, and the reflection of ſunſhine from the houſes would keep the cattle ſo warm, as to prevent tallow from being gathered in any quantity. On the contrary, I have reaſon to believe that they were better tallowed than beaſts of their ſize, fed for the like time, generally are. The one which died of a ſurfeit had 4 ſtone 6 lib. Tron, or 94 lib. Avoirdupois of tallow, and the weight of the carcaſe was only 34 ſtone Dutch.

I ſhall now proceed to ſtate the profit and loſs account, as copied from my ledger, which was made up with every poſſible attention to accuracy, and is preſented, merely that the reſult of the experiment may be ſufficiently underſtood.

Cattle fed at Markle on clover and tares, 1805.	*Dr.*		
To prime coſt at Falkirk and expences -	L. 227	11	0
To wintering on ſtraw, at 15s. each - -	18	0	0
To proportion of turnips in March and April -	6	0	0
To 1¼ acre of ruta baga, at 5l. per acre -	8	15	0
Total charge when clover feeding commenced	L. 260	6	0

Total charge brought over	L.	260	6 9
Cattle fed at Markle on clover and tares, 1805. *Cr.*			
By 10 ſold Aug. 28. at 17l. 15s.	L.	177	10 0
By 13 ſold Sept. 24. - 14l. 5s. -		185	5 0
By hide and tallow of the beaſt that died - - -		3	18 0
	L.	366	13 0

Deducting charge, 260l. 6s., when the cattle were put to graſs, the net profit was 106l. 7s.; beſides what was obtained from ſwine maintained on the offal.

The clover and tare land, which yielded food for the cattle, extended nearly to eleven acres, viz. eight of clover and three of tares; but the ſurveyor's certificate, given below, will be the beſt evidence on this point. I may add, that ſix acres of the clover were good, and would have produced 300 ſtone of hay per acre; the other two were only middling, and could not be eſtimated as exceeding 200 ſtone. Of the tares, one acre or thereby was good, the remainder indifferent. The ſecond crop of clover, owing to the ſevere drought, was very light.

'*Markle*, 2*d October* 1805.—Theſe certify, that I have this day meaſured the clover and tare ground belonging to Mr Brown, the produce of which was conſumed by cattle in the yard, betwixt the 1ſt of June and this date, and find the contents of the clover to be eight acres and one hundred part of an acre; and the tares, two acres and ninety-ſix hundred parts of an acre Scotch meaſure. WILLIAM DICKINSON.'

The neat profit, 106l. 7s., may be claſſed as follows:

6 Acres of clover, at 12l.	-	L.	72	0 0
2 Acres do. 8l.	-		16	0 0
1 Acre of tares -	-		8	7 0
2 Acres do. 5l.	-		10	0 0
	L.	106	7	0

It may be objected, that nothing is ſtated for the trouble of cutting and carting the clover and tares; but I preſume this was much more than compenſated by the great quantity of fine manure accumulated during the proceſs. Had the advice of ſome people been taken, the profit account might have been conſiderably augmented, by taking credit on that head; but it was not my object to ſtate it a halfpenny higher than could be ſufficiently inſtructed. Indeed, whoever reflects upon the difficulty of converting ſtraw into dung on clay ſoils, where turnips cannot be raiſed

raiſed with advantage, muſt allow that a benefit of no ſmall importance is gained from uſing graſs in this manner, independent of the direct profit ariſing from the beſtial.

Had it been practicable to run a compariſon betwixt the lot depaſtured in the field, and the one fed at home, the advantages of the latter mode would have been more ſtrikingly diſplayed; but as the former were mixed with other parcels purchaſed at different periods, it is altogether out of my power to preſent a comparative ſtatement, which would have any pretenſion to correctneſs. Both lots, however, were ſold exactly at the ſame price, and on the ſame day, which affords a ſufficient foundation for two inferences, viz. 1. That cattle will feed equally well on cut meat, if care is taken to furniſh them with a full ſupply in a regular manner, as they will do in the field, when allowed to roam at large: 2. That the ſaving of graſs muſt be conſiderable, though I am unable, from the above circumſtance, to aſcertain the extent thereof with preciſion. However, from the total reſult on the different parcels of cattle, and other ſtock depaſtured, I am inclined to believe that the ſaving per acre will amount to 50 *per cent.*, or, in other words, that a field of clover and rye-graſs will feed one half more beaſts when cut by the ſcythe, than when it is depaſtured. I muſt, however, caution ſuch people as may attempt to feed in the former way, that a very great degree of attention is neceſſary in every ſtep, otherwiſe loſs, inſtead of gain, may eventually follow. The yard in which the cattle are fed ought to be commodiouſly fitted up; a plentiful ſupply of water kept within its bounds; a careful ſervant provided for management; tares ſown in different ſucceſſions, to come in when the graſs arrives at maturity; and freſh proviſion furniſhed regularly, at leaſt five times per day. If I had not been provided with tares, when the clover grew hard and unpalatable, I am almoſt ſure the cattle would have made no further progreſs; but having that article of different ages, the proceſs of feeding went regularly forward. People may object that ſuch a mode of feeding is a troubleſome one; and that the old way of allowing the beſtial to ſeek their own food is much more eaſy and convenient. I grant that a good deal of trouble accompanies home feeding; but am yet to learn the branch of good management, which can be executed with as little trouble as is ſuſtained when the ſyſtem is ſlovenly and improvident. The like objection was urged againſt ſummer-fallow on its firſt introduction; afterwards repeated againſt the drilling of turnips; and, in ſhort, every perfect plan is of conſequence expoſed to it. Perhaps a general adoption of home-feeding would be the greateſt improvement that can be introduced on clay ſoils, which naturally are unfit for the growth of turnips.

All

All ſuch ſoils require a good deal of manure before they can be farmed ſucceſsfully; and where ſituated at a diſtance from a large town, no additional ſupply can be procured. To uſe reſources within their bounds ſeems therefore to be found wiſdom, even laying aſide all conſideration of profit in the firſt inſtance. If the clover break, where a ſix-courſe ſhift is followed, was regularly cut with the ſcythe and conſumed at home, I venture to ſay that every farmer would manure one ſixth more ground annually, than what he is at preſent capable of doing.

One obſervation occurs, with which this paper ſhall be concluded. Cattle, intended for home-feeding, ſhould be in decent condition when graſs is firſt given them; for, if otherwiſe, the beſt part of the ſeaſon, namely, the month of June, when graſs is richeſt, is over before much alteration can be diſcovered. It would alſo be a deſireable circumſtance to have the main part ready for the butcher by the time that the firſt crop of graſs becomes hard and unpalatable; for though tares are an excellent ſuccedaneum, yet, conſidering the difference of produce on a given ſpot, they are more expenſive food; and the ſecond crop of clover contains much leſs feeding matter, even from the ſame bulk, than is yielded from the firſt one.

I have to requeſt the reader's excuſe for the numberleſs egotiſms in this paper; but, writing on ſuch a ſubject, it was altogether impracticable to avoid a defect of that kind.

ROBERT BROWN.

Markle, near Preſtonkirk,
Eaſt-Lothian, Oct. 16. 1805.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

A Salutary Invention for Blaſting Rocks with Gun-Powder.

SIR,

I BEG leave, through the channel of your extenſively circulating work, to diffuſe the knowledge of a moſt ſalutary invention, in regard to the blaſting of rocks by gun-powder, which may happily prove the means of ſaving many a limb or life. It is ſhortly this—

Inſtead of wadding the ſhot of powder, depoſited in the jumper-hole in the rock, in the ordinary way, juſt put in the ſtraw filled with powder, which is to communicate with the ſhot, immediately after putting in the charge, and then fill up the hole, by pouring in dry ſand around the ſtraw. It is conceived, that the finer the ſand, as alſo the heavier, ſo much the better; as it will lye in a more compact body, with fewer interſtices to allow

low the *gas* of the ignited powder of the ſhot to eſcape: it may alſo be proper to let the ſand heap up a little above the mouth of the jumper-hole, to increaſe its weight and reſiſtance.

As this wadding of ſand needs no ramming, the impoſſibility of accident, from a premature exploſion of the ſhot, (which, in the ordinary mode of wadding, unfortunately ſo often occurs from the eliſion of fire ſparks in ramming the wadding home), is abundantly obvious.

As the pouring in of the ſand wadding around the ſtraw, above the ſhot, is done in a moment, all the time formerly conſumed in ramming home the wadding is ſaved, which, I am informed, amounted at leaſt to a quarter of an hour for every ſhot. Beſides, all riſk of bungling the wadding proceſs is avoided, which ſometimes occaſioned as much time to be ſpent in removing the wadding, as it had originally coſt to form the jumper-hole in the rock.

How the mere weight of the ſand, lying above the charge of powder in the bottom of the jumper-hole, ſhould operate a reſiſtance, equal to that of a hard-rammed wadding of the uſual faſhion, I leave others to determine. I acknowledge that, when the ſtatement was made to me upon the 5th current, at Lamancha in this pariſh, by the Honourable Mr Cochrane Johnſton, it appeared to me ſo devoid of probability, that I was inclined to remain incredulous, even although, in corroboration, he aſſured me that this invention (happily hit upon of late by a military officer) was now adopted and ſucceſsfully practiſed in the various operations upon the rock of the fortreſs of Gibraltar, to the very great ſaving both of time and expence, as well as the avoidance of accidents to the workmen. That ſame day, however, I witneſſed the effect of two ſhots with ſand wadding in the lime quarry of Lamancha, which the quarryman, though equally incredulous as myſelf, had been induced to try, and which he declared to have had an equally powerful effect in ſplintering the rock, as any of the moſt ſucceſsful ſhots he had ever witneſſed with a rammed wadding. Indeed, from the ſucceſs, I am confident that the old mode of wadding will never again be reſorted to in Lamancha lime-quarry. The ſand uſed was from an adjoining rivulet; fine enough for mortar, but rather too coarſe for an hour-glaſs.

The fact, of the perfect effect of ſand wadding, appears to me ſo well eſtabliſhed, and of ſuch importance, that I loſe no time in communicating it.

I beg you would impart this to the conductors of any work of rock-blaſting in your neighbourhood, that you may be able to report their experience when you publiſh it. And I hope no abſurd ſturdineſs of incredulity will prevent even the moſt muliſh from

from fairly trying an experiment, which may be made at the expence of one halfpenny's worth of gun-powder.

I am uncertain if, in blaſting rock, in the working of different minerals, it does not ſometimes occur, that the jumper-hole, in which the ſhot is to be lodged, has to be formed in a horizontal direction. If this ſhould be the caſe, perhaps difficulty may be found in introducing the ſand above the ſhot; or perhaps, lying horizontally, the ſand might give leſs reſiſtance, than when incumbent with its whole weight upon the gun-powder in a perpendicular hole.

It is ſaid, (but perhaps in the ordinary way of exaggerating what is new), that a leſs charge of gun-powder ſuffices with the ſand wadding. I am yours ſincerely,

Manſe of Newlands, 7th Oct. 1805. CHA. FINDLATER.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

On Threaving; or a New Mode of Paying for Reaping Corn, according to the extent of Work executed.

SIR,

TILL ſome abler correſpondent of yours ſhall treat the ſubject of threaving, or reaping our crops of corn, by paying the reapers by the threave, I venture to claim a page of your uſeful work, to broach at leaſt a matter, in my poor opinion, of vaſt importance to us farmers. I ſhall ſuppoſe my reader a ſtudent in farming, and begin by defining terms.

A threave of wheat with us in Forfarſhire conſiſts of two *ſtooks*, and each ſtook of wheat conſiſts of twelve ſheaves upright, and two, called hood-ſheaves. For cutting and binding the threave of wheat fivepence has been generally paid.

A threave of oats or barley conſiſts of two ſtooks, each compoſed of twelve ſheaves in all, for which threepence halfpenny, and even fourpence has been paid, cutting and binding. The reapers are alſo expected to ſet up the ſtooks. A ſheaf is thirty inches round. Its dimenſions is aſcertained expeditiouſly by a very ſimple contrivance. To a ſtaff of $2\frac{1}{2}$ feet long, a croſs piece of iron is fixed, from which other two pieces of iron, one at each end, deſcend like the prongs of a fork. The prongs are about twelve inches long, and the ſpace between them exactly ten inches. This ſpace the ſheaf ought to fill. The operation of meaſuring is by this means performed at leaſt ten times faſter than if a ſtring were uſed, and is found to be a great relief to the overſeer.

Formerly our corn was reapt, either by day's wages, if near towns, or by reapers hired for the harveſt. Both thoſe deſcriptions

tions of reapers were fed at breakfaſt, dinner, and ſupper, with the addition of a draught of beer between each meal.

The advantages of threaving are numerous.

1. The labourer is paid according as he works; therefore, if idle, it is at his own coſt.

2. Farmers generally hired a certain number of reapers for the ſeaſon; and none were hired but full grown perſons, who had leiſure from their other avocations, to engage for the whole harveſt; but thoſe may act as threavers, who can ſpare a day or two, or even a few hours of the day. The aſſiſtance of children, juſt able to wield a hook, is alſo obtained; and thus, by being early initiated, become more dexterous reapers than thoſe who begin at a later time of life.

3. It muſt be obvious a much greater maſs of labour is employed in reaping than before; and the labourers have a ſpur to work, unknown before in harveſt work, namely, the reward being proportioned to the work.

4. Reapers are not kept idle, as formerly, when hired for the ſeaſon; for, when one man's corn is not ripe, they can go to another.

5. There is now little difficulty in aſſembling threavers enough to cut down the largeſt fields in one day. What a benefit in wet and catching ſeaſons! And, in regard to expence, I can ſpeak from the experience of this preſent year and the laſt. Threaving is to the full as cheap a way of cutting down corn, as having it reapt either by day's wages, or by reapers hired by the ſeaſon. The beſt threaver may earn 2s. 6d. per day, ſome even 3s.; and women, though inferiorly paid as hired reapers, often earn, by threaving, as much as the men.

6. Inſtead of a maiden feaſt, always a ſcene of riot, and ſometimes of debauchery, a little treat to our own yearly hired ſervants and labourers is ſubſtituted in its room, when the barn-yard gate is ſhut, and the potatoes taken up and houſed.

7. Moſt good things have their mixture of evil. To this general rule threaving ſeems an exception. The evil moſt to be apprehended is that of making the ſheaves too ſmall. But the ſmallneſs of the ſize of the ſheaves is greatly compenſated by their being the ſooner in a condition to be carried home.

To conclude, I cannot ſay how threaving may anſwer elſewhere; but for Scotland, where winter treads hard on the heels of autumn, and ſometimes outruns it, I conſider threaving to be a moſt excellent practice, and, as ſuch, I recommend it to my brother farmers. I am, Sir, yours,

M. N.

BRANCH

BRANCH II.

Review of Agricultural Publications.

Minutes in Agriculture and Planting. By William Amos of Brothertoft, near Boſton, Lincolnſhire; illuſtrated with Specimens of eight ſorts of the beſt, and two ſorts of the worſt Natural Graſſes; and with accurate Drawings and Deſcriptions of ſeveral practical Machines, on ſeven Copperplates; whereby every Farmer will be made perfectly acquainted with the beſt Natural and Artificial Graſſes; and not only be made acquainted with the uſe of, but alſo be enabled to conſtruct, the above Machines. 4to. pp. 92. Lackington Allen & Co. London.

This ſplendid and high-priced work, conſiſts of a botanical and chemical diſſertation on the ſtructure and component parts of vegetables, meant, we ſuppoſe, as an introduction, and to ſhow farmers the author's capacity to teach them a moſt important leſſon. This leſſon is

—'on the culture and uſe of nine of the beſt artificial, and eight of the beſt natural graſſes; ſhewing the great advantages that would ariſe from a more general uſe of them, by enabling the grazier to keep one-fourth more ſtock, and the farmer to produce one-fourth more corn upon the ſame land, than they did before.'

In the preface, the author tells us, that

—'the numerous applications made by a variety of graziers for my opinion concerning the beſt artificial and natural graſs ſeeds, for laying down land to paſture, &c. induced me to undertake the part of the work which relates to graſſes.'

For the uſe, then, of us farmers and graziers, the author begins his firſt diſſertation in the true ſtyle of Des Cartes, by teaching us to unlearn all we had ever learnt; and to learn from him, in the firſt place, what a vegetable is.

'A vegetable,' he ſays, 'is an organized ſubſtance, reproducible only by a peculiar ſort of generation;—augmentable in bulk, not ſimply by accretion, or by chemical combination, but by an enlargement of its organization, in which a peculiar vitality cooperates with chemical, mechanical, and electrical influences, to produce the growth and ſalutary ſtate of the body; and which, after riſing into exiſtence, and paſſing through a certain ſeries of changes, is naturally deprived of its vitality, and diſſolved into its component material elements.'

Let farmers alſo learn to know common clover by the following accurate deſcription of it, given p. 31.

'Trefoil with denſe ſpikes, aſcending ſtems, unequal corols, four equal calycine teeth, and awned ſtipules. Root branchy, ſtems aſcending, a foot or more in height, ſomewhat branching, ſubvilloſe on the upper part. Leaflets elliptic, generally very entire, ſmoothiſh. Upper

Upper leaves often oppoſite. Stipules widely ovate, connate, ſhortly awned, pale, nerved with purple veins branching towards the margin, and anaſtomoſing. Spikes terminal, ſeſſile, ſolitary, ovate, obtuſe, denſe, many-flowered, ſweet-ſmelling. Calyx hairy, ten-nerved, with ſubulate teeth, of which the lowermoſt is twice the length of the reſt, which are equal. Corol purple, one-petaled, with the ſtandard longer than the wings.'

Theſe botanical deſcriptions, by which, in the opinion of Mr Amos, 'every farmer will be made perfectly acquainted with the beſt natural and artificial graſſes,' and moreover be enabled 'to experiment for himſelf,' ſeem to have been copied from ſome of the many Anglo-Latin tranſlations of Linnæus's *Syſtema Naturæ*; and the chapter on the Structure of Vegetables, compiled from Lee, or ſome other elementary writer on botany; for the author has ſhewn, by unequivocal teſts, his want of ſkill in that ſcience. He has, for inſtance, inſtead of the ſheep's feſcue, a graſs that he recommends to farmers, a very minute plant, ſeldom riſing higher than ſix or eight inches, exhibited, in his work, ſpecimens of the Feſtuca duriuſcula!

Some of the obſervations may alſo be traced to Grew, Malpighi, and Du Hamel, and the works of Linnæus and his pupils, particularly the *Amœnitates Academicæ*, and to the Encyclopædias, and other books which have copied from theſe ſources. We muſt add, there are few of the remarks that we have not ſeen before.

Mr Amos ſeems to ſport a little, when he treats of the loves and paramours of female flowers; and indulges the public with a peep into a lady's bed-room in a new ſtyle.

'In *Parnaſſia*, the males alternately approach and recede from the female, the coition laſting ſome days; and, in the moſt beautiful flowers, of *Cactus grandiflorus*, and of *Ciſtus ladaniferus*, where the males are very numerous, ſome of them are perpetually bent into contact with the female; and as they recede, others advance. In other flowers, the females bend into contact with the males; as in *nigella*, *epilobium*, *ſpartium*, *collinſonia*. In *nigella* (devil in the buſh), the females are very tall compared to the males; and, bending down over them in a circle, give the flower ſome reſemblance to a regal crown. The female of the *epilobium anguſtifolium* (willow herb), bends down amongſt the males for ſeveral days, and becomes upright again when impregnated: and, in the *collinſonia*, the two males widely diverging from each other, the female bends herſelf into contact, firſt with one of them, and after a day or two leaves this, and applies herſelf to the other, the anther of which was not mature ſo ſoon as the former. By what means are the anthers in many flowers, and ſtigmas in other flowers, directed to find their paramours? Is this curious kind of *ſtorge* produced by mechanic attraction, or by the ſenſation of love?'

—He adds, 'In ſhort, the formation of the organs for ſexual genera-

tion in vegetables, ſeems to be the *chef-d'œuvre*, the maſterpiece of nature! Farewell, then, to equivocal generation!' and

Sing—*Omnia vincit amor!* &c.

He proceeds (p. 10.) to define in what the peculiar energy of vegetable life conſiſts.

'The peculiar energy of *vegetable life* conſiſts in its converting into peculiar compounds, diſtributing in a peculiar mechanical arrangement, and employing, for the general enlargement and ſupport of its organic ſtructure, whatever ſuitable matters are preſented to its proper exterior organs.'

This definition, as well as that of a vegetable, already quoted, it muſt be obvious to the meaneſt capacity, defines nothing, and affords not one ſingle new, nor even any correct, idea, on the ſubject. To be completely ſenſible of this, let the word *vegetable*, printed in capitals in the original, be deleted, and the word *animal* put in its ſtead, and the definition will apply without diſtinction, and without altering one other word, to animals as well as vegetables.

Further, 'After vegetable life or irritability has thus commenced, its firſt energy is exerted in receiving from the earth, in which the embryon is imbedded, the *impulſe of water*, impregnated with various ſoluble or ſuſpendible ſubſtances, which its exterior organs refine to gas as they convert it into nouriſhment.'

Here we would be glad to be informed what the *impulſe of water is*; for we have been in uſe, heretofore, to conſider impulſe as meaning a power, and not as a ſubſtance.

The author's theory as to the food of plants is, that they derive their nouriſhment from water impregnated with various ſoluble or ſuſpendible ſubſtances, refined into gas or air.

The experiment of Euler will however be recollected, which aſcertained that ſome plants may be nouriſhed by pure diſtilled water; and againſt the doctrine, which is no new one, that air is the food of plants, many ſtrong objections lye. If, for inſtance, the flower ſtalk of a lily that has been allowed to droop, and even to become entirely flaccid, is put into water, it will abſorb the water, and ſoon become firm and erect, though certainly not filled with gas.

The author, however, does not ſtop his theories with telling us what is the food of plants. He enters much deeper into the ſecrets of nature, and condeſcends upon the particular gaſes which are the food of plants, and even mentions thoſe that are moſt eaſily digeſted.

'Water undecompoſed, hydrogen, carbon, azote, oxygen, are the only ſorts of food which plants can take in. It is in general ſalutary for plants to receive their nouriſhment rather in a gaſeous, than an aqueous form.'

It occurs from this ſpecimen, that the author would make an excellent

excellent quack doctor; for this is completely in the character of the once famous Dr Graham.

He goes on to detail the elements of the chemiſtry of vegetables pretty correctly in general, as may be ſeen from comparing it with any elementary book in that ſcience, embracing acids and alkalis, gums and mucilages, &c. &c. which ſurely have very little connexion with graſs ſeeds; but for this digreſſion he makes a ſort of apology in the preface, in the following terms:

'Perhaps a great part of this work, ſo far as relates to graſſes, will be new to many among my readers. But as agriculture cannot be practiſed with any tolerable ſkill and advantage without ſome knowledge of botany, I have therefore thought it neceſſary to give ſuch a condenſed account of the ſtructure, propagation, diſſemination, and *component parts* of vegetables, as coincided with the plan of this work.'

How far it is juſtifiable, in a work drawing the attention of practical farmers from its title, to fill up the third part of it with ſuch diſquiſitions, may be much doubted; but we ſhall paſs it over, to conſider the principal part of the work, viz. artificial and natural graſſes.

Under this head, the author treats of, and recommends, nine artificial, and eight natural graſſes. He begins with artificial graſſes. We, however, do not mean to give farmers the whole ſecret, as we ſhall reſerve *in petto* the long botanical deſcription attached to each graſs. Indeed, ſuch deſcriptions are only of uſe to thoſe that are well acquainted with botany; and even Mr Amos himſelf has not been able to apply them to the plants he means to deſcribe, with the neceſſary accuracy of an author. It is certainly much to be lamented, that the names of the common graſſes are not known by a dialect familiar to every one, as nothing whatever appears ſo much to retard perfection in their culture, as the want of common names in treating of them.

'I. *Medicago Sativa*, Purple Lucern, or Medick.

'Perennial. This plant is the moſt productive, and comes into uſe ſooner than any other of the artificial graſſes. Horſes, beaſts, ſheep, and pigs, are very fond of it when it is mown and given them green, which is the moſt uſeful application of it. It thrives beſt on rich, dry, loamy ſoils, which ſhould be made deep, fine, and clean of weeds, by culture. About the middle of April, ten pounds of ſeed ſhould be drilled on an acre, in rows of eighteen inches aſunder, and one inch deep, with a row of common red clover between each, then buſh-harrowed and rolled. Nothing more is neceſſary to be done till weeds appear, when it ſhould be hand-hoed well, and the weeds in the rows pulled out by the hand. As ſoon as more weeds appear, it muſt be hand-hoed and hand-weeded a ſecond time, and even a third time, if neceſſary. When this is done, great care ſhould be taken not to tread upon the young lucern. As ſoon as it begins to bloſſom, it ſhould be mown, carried off, and given to the ſtock green. By this mode of application,

it will keep more ſtock than any of the other graſſes. It requires three years in coming to perfection; hence the propriety of ſowing common red clover along with it. After that time, it may be mown three, four, or five times in a ſeaſon. Between every mowing it ſhould be well hand-hoed, and made quite clean of weeds. Every third year it ſhould have a covering of rotten dung, after the rate of eight or ten tons to the acre, about Martinmas.'

On this plant, it may be remarked, that it requires a much lighter ſoil than red clover, and will even live on ſuch dry ſandy ſoil as is fit for ſcarce any other vegetable production. In drills, it may be eaſily kept clean by the horſe-hoe; but, as a common article of fodder for farmers, it will ſcarcely anſwer the expence and trouble. Dr Martyn ſays, 'Of many thouſand acres ſeen in France, Switzerland, and Italy, we never obſerved one in drills. When ſown in broadcaſt, it will laſt about eight years, or perhaps longer, if the land be laid down clean.' It is ſometimes planted by the dibble the ſecond year. If ſown with barley, care muſt be taken not to ſmother it. Its earlineſs is one of its greateſt recommendations; and, from all accounts, it is a moſt valuable green crop for farmers.

'II. *Hedyſarum Onobrychis*, Cockſhead or Sainfoin.

'Perennial. This plant produces the beſt crops upon dry, light, rich land; but it will thrive upon the thinneſt limeſtone, gravelly and chalky ſoils, with great luxuriance; even where theſe are ſo poor as to afford a very ſcanty crop of any of the other ſorts of graſſes. It thrives beſt when ſown alone, though it is frequently ſown with barley and oats. But upon whatever ſoil it is ſown, the land ſhould be brought into a very fine and clean tilth by culture. About the latter end of March, or beginning of April, the land ſhould be ploughed; if it is roughiſh, it ſhould be harrowed once in a place, then upon every acre ſow ſixteen pecks of ſainfoin ſeed; harrow the land well, and then ſow eight pounds of common red clover or trefoil upon every acre; afterwards, the land ſhould be buſh-harrowed and rolled. If weeds appear among the ſainfoin, they muſt be deſtroyed as they come up, by hand. No ſtock ſhould be ſuffered to graze upon the ſeeds the firſt year; and if it were top-dreſſed with one quarter of rape or bone duſt to an acre, about old Michaelmas, the plants would be greatly invigorated. Upon ſuch land as the above, it furniſhes a crop of hay in ſummer, of greater conſideration than any other of the artificial graſſes. The hay is excellent for all kinds of ſtock, and the aftermath very good for cattle in autumn, and for ſheep in winter, till Candlemas. Hence, ſainfoin is a moſt invaluable graſs on limeſtone, gravelly and chalky ſoils. Sainfoin requires three years in coming to perfection: hence the propriety of ſowing common red clover or trefoil along with it. This graſs ſhould be mown before it is in full bloſſom.

'III. *Sanguiſorba Officinalis*, Common Burnet.

'Perennial. This plant, though little cultivated, is highly valuable, either green, or in hay, for horſes and cattle, and is an excellent winter food

food for ſheep. It delights moſt in a dry, clean, light, and deep ſoil; but it will grow very well on poor gravelly and chalky ſoils, which muſt be made clean and fine by culture.'

We here remark, that Mr Amos has confounded two different plants. His botanical deſcription applies to a hard woody plant, which grows in moiſt meadows, called the Great burnet, by ſome; whereas the Cultivated burnet (Poterium ſanguiſorba) thrives chiefly in a calcareous ſoil. It is recommended by Dr Withering, as valuable in ſheep paſtures of a calcareous ſoil only; for that author remarks, that the Poterium ſanguiſorba, or Common burnet, 'not anſwering the farmer's expectations, is now in a great degree laid aſide. Cattle are ſaid not to be fond of it; nor is its produce ſufficient to anſwer the expence attending its culture.'

In like manner, Dr Martyn, when treating of the Poterium, obſerves—'Some years ſince, Mr Rocque attempted to introduce it as food for cattle. It has only one good quality, which is, that it continues green all winter; but cattle are not very fond of it, nor does it yield a ſufficient burden to pay the farmer for the expence of cultivating it.' Burnet is alſo diſapproved of, as unproductive, by Dr Anderſon.

'IV. 1. *Trifolium Pratenſe*, Meadow Treſoil, or Common Red Clover.

'Perennial.—This is a moſt invaluable plant, whether it be mown and uſed green, depaſtured, or made into hay. But notwithſtanding its being a perennial, yet it only holds its vigour two or three years. By its long tap root it reſiſts the effect of exceſſive drought on the dryeſt ſoils, and increaſes the quantity of vegetable mould in all. It will grow on moſt ſoils, but not equally productive; and whether it be mown and uſed green in the ſtall, depaſtured, or made into hay, it generally produces four or five times the quantity of fodder that the ſame land would have done with common graſſes! In good rotations, it frequently makes the ſecond crop in lieu of white corn; mown once, and the after graſs eaten off with horſes, beaſts or ſheep, and the land ſown with wheat. In that caſe, two pecks of beſt rye graſs, mixed with fourteen pounds of this clover ſeed, ſhould be ſown upon an acre, which not only increaſes the quantity, but alſo greatly improves the quality of the hay. If the clover is for ſtall feeding, the rye graſs ſhould be omitted. On poor light ſoils the better way is to take two or three crops of corn, and then to lay the land down to reſt, three, four, five, or ſix years. In this caſe, I would adviſe the farmer to ſow the following ſeeds on an acre.

Burnet, - - -	4 Pds.	Rye Graſs, - -	2 Pks.
Cow Red Clover, -	4 Do.	Vernal Graſs, -	¼ Do.
White Clover, -	8 Do.	Sheep's Feſcue Graſs, -	¼ Do.
Treſoil, - - -	4 Do.	Creſted Dogs-Tail Graſs,	¼ Do.

'By this management the ſoil would acquire a vaſt increaſe of vegetable mould; and, by the paſture maintaining one fourth more ſtock than it did before, it would be greatly charged in manure, by which means the

lands would be kept in perpetual good condition; and, when brought under tillage, it would produce one fourth more corn than it did before.'

'IV. 2. *Trifolium Medium*, Middle Trefoil, or Cow Red Clover.

'Perennial.—Differs from the former in having a more branchy flexuose ſtem, longer linear ſtipules, the two upper calycine teeth ſhorter, and laxer ſpike. Leaflets elliptic, ſubglaucous beneath, and hairy on the margins. This clover grows naturally in high chalky fields, and in gravelly fields, with clay beneath.'

The Trifolium medium is ſaid to remain longer in the ſoil than the Common red clover; but we have the authority of the Flora Ruſtica for ſaying, that it is a miſtake to confound it with the Cow red clover, which is a different plant.

'V. 1. *Trifolium Repens*, Creeping Trefoil, or White Clover.'

Perennial.—All that is ſaid by the author on the ſubject of White clover, is as follows.

'This is the ſweeteſt graſs for all ſorts of ſtock yet known, and makes the cloſeſt ſward, and is very productive of foliage. Hence it is moſt peculiarly adapted to laying down land to paſture. It flouriſhes moſt upon rich, dry, warm ſoils; yet it will accommodate itſelf to moſt kinds. It is ſeldom ſown alone, unleſs it be to raiſe the ſeed; nor ſhould it be ever mown for hay. In laying down rich ſoils, which are intended to remain in paſture for many years, this ſeed ſhould predominate.'

'V. 2. *Trifolium Procumbens*, Procumbent or Hop Trefoil.

'This plant is not very productive, and thrives beſt upon dryiſh gravelly ſoils and paſtures.'

'VI. 1. *Vicia Sativa*, Common Purple Flowered Summer Vetch, or Tare.

'Annual.—The great objects of this Tare are, 1ſt, Summer herbage, either depaſtured, or mown green, as ſoiling for horſes, &c.; 2d, Hay as a ſubſtitute for Red clover (on land that has tired of growing it); 3d, Manure, to be buried in by the plough; and, 4th, Seed.'

We remark, that there are ſeveral varieties of this excellent Tare.

'VI. 2. *Vicia Lathyroides*, Purple Flowered Wild Vetch, or Winter Tare.

'Annual.—It is diſtinguiſhed from the former by its ſmooth legumes, and rough tuberculated ſeeds, not to mention that the tendrils are never branched, nor the leaflets more than ſix in number. The moſt proper ſoil for both kinds of tares is a barren ſandy ſoil; next to it are gravelly, chalky, and limeſtone ſoils; but they will thrive in moſt kinds, except ſtrong moiſt clayey, or cold moory ſoils.

'The great objects in cultivating this Tare are, 1ſt, Spring food and Summer herbage for cattle and ſheep, eſpecially ewes and lambs; 2d, Hay as a ſubſtitute for Red clover; 3d, Manure to be buried in by the plough; and, 4th, Seed.'

We remark, the Vicia lathyroides grows about three or four inches long, and ſo will, no doubt, afford an excellent crop of hay!

The

The author next proceeds to what he calls Natural graſſes; all of which are perennial. The firſt that he takes notice of, is,

'*Anthoxanthum Odoratum*, Sweet-Scented Vernal Graſs.

'Though this graſs is not ſo productive as ſome, yet it is valuable as an early graſs, and for its readineſs to grow in all kinds of ſoils and ſituations. Cattle and ſheep appear to be very fond of it.'

Dr Withering ſays, that this graſs is not palatable to cattle. We may add, that it is a ſmall and ſhort-lived plant, running too quickly into flower ſtalks, that have little or no foliage.

'*Alopecurus Pratenſis*, Meadow Fox-Tail Graſs.

'This is an early graſs, and very productive. It grows in fields and meadows everywhere, eſpecially ſuch as are rather moiſt; and it is an agreeable graſs to cattle.'

Curtis, Stillingfleet, and all writers on the ſubject, agree in commending this graſs.

'*Poa Pratenſis*, Smooth-Stalked Meadow Graſs.

'The foliage of this moſt noble graſs is early, very abundant, and abiding; and it rather affects a dry, than a moiſt ſituation. This is a very ſweet graſs; and, when cloſe fed down, is very acceptable to ſheep, cattle, and horſes.'

This graſs labours under one very great diſadvantage. From the nature of its roots, it is almoſt as difficult to be eradicated as the Couch or Twitch graſs.

'*Poa Trivialis*, Rough-Stalked Meadow Graſs.

'This is a good graſs, both for paſture and hay; yet very inferior to the *Poa pratenſis*, as it is coarſer, and apt to go off after mowing. It is very productive, and loves a moiſt and rather ſhady ſituation.'

The obſervations on this graſs are juſt. It is one of the beſt and moſt common of paſture graſſes, occupying the richeſt ſoils.

'*Feſtuca Ovina*, Sheep's Feſcue Graſs.

'This graſs, though introduced here, is not entitled to the encomiums which ſome writers have beſtowed upon it.'

We remark, this plant does not live long in rich ſoils, and is a moſt trifling graſs, found only in arid paſtures, from which it is in vain to tranſlate it. The *Feſtuca duriuſcula*, however, with which Mr Amos has confounded it, is a much larger plant, common in rich light ſoils, where its delicate foliage is kept cloſe eaten by cattle.

'*Feſtuca Pratenſis*, Meadow Feſcue Graſs.

'The foliage of this moſt excellent graſs is very ſweet and productive. It is very hardy, and will grow in any kind of ſoil. It makes excellent hay; and all ſorts of cattle and horſes are fond of it.'

What is here ſaid of this graſs is accurate, and all authors agree in praiſing it. It may be added, that it delights moſt to grow in clay ſoils and loams. But it affords more hay, is ſweeter paſture, and bears the viciſſitudes of climate, and wetneſs and drought of ſoil and ſituation, far better than rye-graſs, or perhaps than any other graſs whatever.

'*Lolium Perenne*, Darnel or Rye-Graſs.

'This is a moſt excellent graſs, both for paſture and hay. The foliage of this graſs is early, but not very abundant, and is highly acceptable to ſheep and cattle. It is apt to run into flowering ſtems, and therefore requires to be cloſe fed down; and as it ſecretes and lays up a magazine of ſaccharine nutriment, particularly in the joints of its ſtem, ſo it affords more nouriſhment to horſes when made into hay, than any other of the natural graſſes, and it does not affect their wind; hence it is particularly preferable to hunters and racers.'

It would have perhaps been of as much importance to farmers, if Mr Amos had told them the manner of diſtinguiſhing what they call an annual ſort of this graſs, than all he has alleged about its uſe for race horſes. It is indeed ſaid, that the caſe of Rye-graſs dying the ſecond or third year, happens only where it has been too frequently ſown on the ſame ground. The common bad practice of too late cutting of crops deſigned for hay, may, it is ſuppoſed, be ſometimes alſo a cauſe of this frequently ſerious diſappointment to the farmer; but the introduction of Meadow-feſcue, in place of Rye-graſs, if it does not alarm the gentlemen of the turf, is the beſt cure for the evil.

'*Cynoſurus Criſtatus*, Creſted Dogs-Tail.

'This graſs is not very productive of foliage; is apt to run into flowering ſtems; and grows naturally in dry ſituations.'

That Ray or Ryegraſs ſhould ſtill be the only ſort of natural graſs, the ſeed of which is to be had in any quantity in the ſhops, is a diſgrace to this age and nation; as it ſeems agreed on by all acquainted with the ſubject, that Meadow Feſcue, and perhaps ſeveral other of the graſſes, are in every reſpect ſuperior to it.

Mr Amos has omitted many excellent graſſes for paſture; for inſtance, the Poa annua, or annual Meadow graſs, is, in ſome circumſtances, inferior to few others. It multiplies itſelf with uncommon ſpeed, and thrives on trodden grounds better than any other graſs. Its foliage is tender and grateful to cattle; and it is one of the beſt graſſes for the dairy.

If quantity of hay is the object, the ſtrong and tall rough graſs, called Cocksfoot (dactylis glomerata), which grows in winter, and is very early, and, in good ſoils, runs up to the length of between four and five feet, will yield, on the ſame ſort of ground, a crop double of that of Rye-graſs. It riſes alſo, quickly after being cut, and makes good aftermath.

Mr Amos having enumerated all the ſuppoſed qualities of the nine firſt mentioned plants which he calls artificial, and of the eight laſt mentioned natural graſſes, proceeds to direct how a good rich ſoil ſhould be laid down for paſture.

'The firſt thing to be done in laying down land to paſture, is to bring

bring it into a very fine clean tilth by fallowing it completely, and to allow eight or ten tons of dung to an acre.' He adds, 'Upon good rich ſoils, which are intended to remain in paſture for many years, the proper kinds and quantities of ſeeds to be ſown upon an acre, are as follows.

'Of Artificial Graſs Seeds.

Cow Clover, 4 pounds. White Clover, 18 ditto. Trefoil, 4 ditto.

'Of Natural Graſs Seeds.

Vernal Graſs, -	¼ Peck.	Meadow Feſcue,	½ Peck.
Smooth Stalked Meadow Graſs,	1 Do.	Rye Graſs, -	1 Do.
Sheep's Feſcue, - -	¼ Do.	Rib Graſs, .	¼ Do.'

We were rather ſurpriſed to find ſo few of the graſſes, treated of by Mr Amos, adviſed by him to be ſown on good rich ſoils intended for paſture. We might have wondered to find among them Sheep's feſcue, a plant very ſmall, that grows on exceedingly dry banks, ſhort-lived, and that cannot exiſt at all, if overſhadowed by luxuriant foliage, had we not obſerved that the author has miſtaken that minute graſs for a larger. This ſhows that he has not recommended this graſs *at leaſt*, from any perſonal knowledge of its good qualities.

It muſt alſo appear ſtrange, that rib graſs, which is not among his ſelect number, ſhould be recommended. This plant, we believe, is now got rather into diſrepute. The author, however, afterwards takes notice of it as follows.

'*Plantago Lanceolata*, Ribwort Plantain.

'This plant, properly ſpeaking, does not rank among the claſs of natural graſſes; but as it appears in ſo great quantity in moſt of our meadows and paſtures, not to mention it here might be deemed an unpardonable omiſſion. Horſes, cattle and ſheep are very fond of it; but it is not very productive.'

Linnæus ſays that cows refuſe this plant. Dr Withering obſerves, that when it grows detached from other plants, he has never ſeen cattle touch it. Mr Dickenſon relates an *experimentum crucis;* that twelve acres being ſown with it, a plentiful crop was produced, but no animal would eat it. On the other hand, there are not wanting ſome who allege that it occaſions rich milk; but probably on no better ground than ſuch an abſurd vulgar error as that mentioned in the Flora Ruſtica, by which it is conceived, that even the *Ranunculus acris*, and the other ſorts of *Crowsfoot*, common in rich paſtures, though ſhunned by cattle, contribute, by their ſplendid yellow flowers, to give butter the ſame colour, and are therefore called, vulgarly, Butter flowers and Butter cups.

Mr Amos goes on as follows.

'The firſt eight ſorts of natural graſſes are all that the huſbandman ought to ſow in laying down land to paſture; and, according to the nature

nature of the ſoil, the ſeed of that graſs moſt ſuitable to it ſhould predominate; but the two graſſes, No. 9. & 10.' (*Triticum-repens, Creeping-Wheat, Twitch, Wreck*, or *Couch-graſs*, and *Holcus-lanatus, Woolly-holcus*, or *Meadow-ſoft-graſs*, called alſo by ſome *White-graſs*, and *Yorkſhire-fog*, of both of which graſſes ſpecimens and botanical deſcriptions are given in the work under review) 'ſhould be held in utter abhorrence. And if it had not been to make them ſo well known, that they might be entirely rejected, I ſhould not have troubled my readers with either a view or a detail of them. And ſorry am I to ſee the *Holcus-lanatus* recommended in ſome of the prize eſſays communicated to the Board of Agriculture in 1801.'

But, pray, Mr Amos, condeſcend to give ſome reaſons for conſidering the *Holcus-lanatus* as bad herbage? Why would you have us to rely, in every point, on your mere *ipſe dixit*, when ſo many names, whom we have been in uſe to reſpect before you made your appearance, have recommended this plant? Dr James Anderſon ſays of it, 'Soft graſs (*Holcus-lanatus*), upon damp ſoils, is ſtill more early than rye-graſs, and forms a paſture graſs that may perhaps in ſome reſpects be very valuable.' Haller alſo ſpeaks highly of this graſs as early food for cattle. It produces an abundant crop, and is well adapted for moiſt ſoils and new drained peat bogs. And although cattle refuſe its flowering ſtems, yet theſe being cut, the plants ſoon grow again, and make good paſture, particularly for ſheep.

This leads us to a more general view of the ſubject of graſſes, which, we confeſs, is an important one. It has been particularly conſidered by Stillingfleet, Curtis, Swaine, Marſhall, Knap, Anderſon and others, who, in many inſtances, differ from Mr Amos, who takes no notice of any of them.

Have not the public a right to know upon what pretenſions this gentleman comes forward to teach them? Does he ſtate any practical experiments? No. Has he ſown any of theſe graſſes ſo as they might be eaten ſeparately by any ſpecies of animals? No. Has he tried the weight or value, in any ſhape, of the produce of even an acre ſown with any of theſe graſſes, either green or in hay? No. In ſhort, for any thing that appears in the work, the author may have either acquired a knowledge of the elements of botany, or copied his botanical obſervations, from others; and, with the aſſiſtance of the works of the gentlemen above mentioned, may have compiled this book in his cloſet, giving characters of the graſſes according to his own caprice.

Indeed, were it not from the title of this work, one would be inclined to think, from ſome hints dropped, that the original deſign of it was no more than to give a botanical deſcription of ſome of the graſſes. The author ſays,

'The difficulty of diſtinguiſhing the graſſes from one another, has

no

no doubt proved one grand obſtacle to their cultivation. Many of thoſe plants are ſo much alike, that the moſt diſcerning botaniſts are often at a loſs to know ſome of them apart; if ſo, how eaſily may the huſbandman be deterred from the arduous taſk? But, perhaps, the chief reaſon has been, that perſons who might be expected to collect the ſeeds, and to make the improvements, have not had the means fairly put into their hands, of making the experiment. In order to remove that difficulty, and to enable ever huſbandman to experiment for himſelf, I ſhall here, not only give ſpecimens of eight ſorts of the beſt *natural graſſes*, but likewiſe ſuch a *brief deſcription of them, as will enable every huſbandman with certainty to collect them ſeparately*. He may then ſow them ſingly on ſeparate beds, or plats, and graze them for a conſiderable time, to determine their different effects in feeding and fattening different kinds of ſtock; and afterwards join them in different combinations and proportions, as the reſult of his experiments may direct. Whether the method I have adopted on this occaſion may be more ſucceſsful, muſt be determined by my readers. At all events, the time I have employed, the pains I have taken, and the expence I have been at, in collecting and *finiſhing* the graſſes, muſt be evident to every one of them.'

We preſume the author means, that it was no eaſy taſk to acquire ſo much of the knowledge of botany as is diſplayed in this work; for, what he means by *finiſhing the graſſes*, we do not pretend to underſtand; and it is not alleged, as far as we can diſcover, that he collected or ſowed the ſeeds of any of the plants deſcribed, or made any experiment except what he relates in treating of ſheep's feſcue, the graſs that he himſelf miſtook, while he pretends to have enabled 'every huſbandman to experiment for himſelf.' He ſays,

'In an experiment made upon all the graſſes recommended here (viz. the natural graſſes) which were each ſown upon ſeparate beds or plats, upon a lightiſh dry ſoil, and grazed promiſcuouſly with ſheep, I found this graſs was never ſo cloſe fed down as the other ſeven.'

It may be remarked, that all the plants in this work, called artificial graſſes, do not ſtrictly deſerve the name of graſſes. If, for inſtance, tares are to be denominated graſs, why may not peas be alſo called graſs? They ſhould, perhaps, be called green crops for cattle.

The author has not taken notice of a ſingle artificial graſs, that has not been known to farmers in this iſland for a great period of time (except thoſe he has miſtaken); and, as far as we know, he has thrown no new light on the ſubject of their culture. He has, indeed, recommended lucern for rich lightiſh ſoils, to more general obſervation; but he has praiſed many plants that others have ſeen cauſe to diſcommend, and that have never been generally cultivated by farmers in any diſtrict of Great Britain.

Beſides

Beſides clovers or trefoils, tares are in common uſe, and much eſteemed as a green crop. We here mean the *Vicia ſativa*, and its varieties, called by this author Summer vetch: For, as to the *Vicia lathyroides*, called by him the Winter, or Wild vetch, it is a moſt diminutive plant, that grows naturally on dry barren banks, ſeldom exceeding two or three inches in length; and upon what principle it is praiſed, we cannot diſcern, unleſs the author has miſtaken it for ſome other vetch, probably the *Lathyrus-pratenſis*, which is recommended by Linnæus, Anderſon, Curtis, and Young. The *Vitia-cracca*, a perennial, native vetch, of great length, has been alſo much commended; but the difficulty of eradicating it, prevents its being mentioned with much approbation by us.

If the author had meant to recommend, with effect, the other leſs known artificial graſſes to the notice of the grazier or farmer, he ſhould have endeavoured to have ſhown, experimentally, their comparative advantages above other green crops. In this, the merit of the work would have conſiſted.

Several other ſorts of green crops for cattle have been mentioned by different authors. Chicory, Succory or Endive, *Cichorium-intybus*, for inſtance, has been long cultivated in France and Lombardy, and is reputed to increaſe both the milk and fleſh of cattle; and to be freely eaten by ſheep. Buck wheat (*Polygonum-fagopyrum*) is alſo a common crop in many parts of the Continent; and in Norfolk not unfrequent. It is a plant of rapid growth, and may be ſown ſo late as the end of May with ſucceſs. It is ſometimes ploughed in as a manure, and ſometimes mowed for fattening ſwine and poultry, and feeding horſes. The Romans had green crops of Lupines, of Cytiſus, and ſeveral others that have never yet been tried in our fields. As ground tires of a repetition of the ſame crop, nature points out the neceſſity of a change.

With reſpect to the natural graſſes, with which the author adviſes ſowing grounds intended for paſture, he has ſaid very little new indeed; nothing to induce any one to alter the preſent ſyſtem; nothing to aſſure the grazier that, by ſowing them, he ſhall be enabled to keep *one fourth* more ſtock, as repreſented in the title-page, and often repeated in the work. It appears indeed reaſonable, that ſome of the beſt of the natural graſſes ſhould be ſown on lands intended for paſture; and many have been enumerated by different authors as proper for that purpoſe. Farmers, however, are ſtill left in a great degree in doubt about them; and perhaps may continue ſo, till ſome public-ſpirited perſon ſhall ariſe, who will ſow whole encloſed fields with natural graſſes of different ſorts ſeparately, and try their comparative merits with ſkill, judgment, and perſeverance.

Even

Even after the comparative merits of the graſſes are tried, in as far as regards good ſoils, it will remain to be inveſtigated, what ſorts are adapted for forming the moſt productive and beſt crops on the different ſorts of bad ſoils; for there are ſome good graſſes, the *Poa-flexuoſa* for inſtance, that cannot exiſt on a rich ſoil. We are informed, that Mr Don, ſuperintendant of the Botanical Garden of Edinburgh, is at preſent engaged in this inquiry; and we heartily wiſh him ſucceſs.

From Mr Don we learn, that he has tried the *Poa-nemoralis* (wood-meadow-graſs) on a dry bank, which has been covered with it theſe ſeven years. It grows from twelve to ſixteen inches in height; and he recommends it as a good graſs for dry poor gravelly grounds, where rye-graſs would not be productive. It makes a good hay crop; and is keenly eaten by horſes, cows, and ſheep, therefore good for laying down ſuch grounds to paſture. He alſo recommends the *Seſleria-carnlea*, *Poa-glauca*, and *Poa-alpina*, which grow on the higheſt mountains, as proper graſſes for poor and expoſed ſoils. The latter plant, though ſmall, continues freſh, and grows even in winter. The *Seſleria* flowers as early as March.

The title of the work does not agree with its contents. It bears to be 'Minutes in Agriculture and Planting;' but all that appears in the work upon the ſubject of planting, is a diſſertation of three pages on tranſplanting trees, preparatory to the introduction of an account of a machine for tranſplanting old trees, or rather for carrying old trees that are meant to be tranſplanted. The preliminary diſſertation, in our opinion, is incorrect in many inſtances, eſpecially the remarks, that the laburnum and the beech will bear to be removed when grown to 20 or 25 feet high; for theſe trees, particularly the laburnum, we have always found to be the moſt difficult of any to be tranſplanted, when aged, with the leaſt probability of ſucceſs. The lime-tree is, indeed, almoſt the only one that ought to be attempted to be removed at an advanced age. Large elms and willows, we have heard, have been alſo oft-times tranſplanted ſucceſsfully. But it is a fact well known, that we come ſooner to our purpoſe of ſhade or ſhelter, by planting the quick growing trees and ſhrubs when young, than by tranſplanting large trees. Even if particular kinds are wanted, the young and healthy plant will ſoon overtake the old tranſplanted tree.

As to the Tree Tranſplanter, it ſeems in every reſpect unworthy of the notice of farmers; but we recommend it to the attention of the great Emperor of France, who, perhaps imitating his grand predeceſſor Lewis the XIV., may require that an extenſive moor ſhall be inſtantly converted into another ſuch elegant park as Verſailles; and, for that purpoſe, that trees a hundred years

old

old ſhall be removed by the machines of this ſecond Le Notre from the diſtance of hundreds of miles, by the aſſiſtance of thouſands of men and horſes.

If large trees muſt be tranſplanted and carried to a diſtance, with perſons of moderation, carts will anſwer the purpoſe; and Mr Marſhall, in his excellent treatiſe on planting, recommends to preſerve the roots of trees to be tranſplanted, as more worthy of attention, than carrying lumps of earth attached to them.

The other machines mentioned, in our humble opinion, do not merit any particular notice, nor do we think them calculated to produce any benefit to agriculturiſts.

The couch-graſs-drag machine, by which the author propoſes to clean land of couch-graſs roots, without ploughing or ſummer-fallowing, we cannot conceive poſſible to anſwer the purpoſe; and the couch-graſs-rake ſeems to do no more than what harrows can accompliſh.

The Scuffle for cleaning lands incumbered with bean or pea ſtubble, previous to the ground's being ſown with wheat, and for deſtroying weeds upon fallows, where ploughing might be injurious, ſeems ſuperfluous; for ploughing or harrowing, we apprehend, will in general ſerve every ſuch purpoſe, as there would be a multiplicity of implements, were all uſed that are invented.

The next machine deſcribed is a ſpike and plain roller in one frame, which may be uſed together, or ſeparately, and is called the Compound Roller.

Then follows a Sward-dreſſer, for levelling molehills on paſture grounds, and for tearing up moſs or fog. It is of the nature of a harrow, and drawn by two horſes.

The laſt machine is the Thiſtle-cutter, deſigned for cutting the thiſtles on paſture fields. It conſiſts of four ſcythes, is drawn by one horſe, and ſaid to cut twenty acres a day. We are of opinion, that thiſtles and ragworts may, in general, by farmers who keep their lands tolerably clean, be cut down by the common ſcythe. And although the field or horſe-thiſtle, which is the moſt troubleſome of the kind, is a perennial plant, yet, if frequently cut down near the root, may, as well as all the other larger weeds, with a little perſeverance, be certainly extirpated.

The deſcription of each of theſe machines is accompanied with an elegant engraving by Howlett.

The language of this work is frequently inflated; and ſo great an affectation is ſhown for the uſe of learned words, as ſometimes may extort a ſmile. As, for inſtance, *ſtorge* is a Greek word not in common uſe, and, in the paſſage wherein it

it is uſed by Mr Amos, would have been better ſupplied by the home-learnt word 'affection.' In deſcribing ſugar, the following high-ſounding apoſtrophe is introduced: 'Great God of juſtice and wiſdom, grant that this luxury may in thy good time be cultivated by the hands of free men, and may thence give happineſs to the labourer, as well as to the merchant and conſumer.'

The ſeven natural graſſes recommended, together with the *Feſtuca duriuſcula*, miſtaken for the ſheep's feſcue graſs, and alſo two graſſes not approved of by the author, viz. couch graſs and ſoft graſs, are illuſtrated by ſpecimens in the nature of a *hortus ſiccus*; and the ſix firſt of them are repeated in elegant coloured prints engraven by Barnard. We remark, that it is inexplicable why the whole graſſes, artificial and natural, praiſed in the book, are not exhibited; and more ſo, that ſome graſſes ſhould be doubly obtruded to our notice.

Upon the whole, this work is of the greateſt importance to the farmer,—on account of the very high price he muſt pay for it; but though the prints and decorations, no doubt, enhance the price much beyond the extent of ſolid information communicated, yet the author ſhould have remembered, that the value of ſuch a book is to be eſtimated from its intrinſic uſefulneſs, and not from its extrinſic decorations: For

What is a butterfly at beſt?
What! but a caterpillar dreſt.

S.

Obſervations on the Preſent State of the Highlands of Scotland, with a View of the Cauſes and probable Conſequences of Emigration. By the Earl of Selkirk. Longman & Co. London. Conſtable & Co. Edinburgh.

For ſeveral years paſt, the ſubject of emigration has agitated the public mind, and occupied the attention of every perſon connected with the Highlands of Scotland in ſuch a degree, as to occaſion ſome legiſlative regulations, which probably were unneceſſary, but at any rate interfered with the natural liberty of thoſe upon whom they were meant to operate. Under theſe circumſtances, we are glad to ſee the ſubject inveſtigated, and its bearings and conſequences aſcertained by a perſon poſſeſſed of ſuch eminent abilities as confeſſedly belong to Lord Selkirk; and are highly gratified by the accurate and ingenious picture of the former and preſent ſtate of the Highlands of Scotland, now preſented to us by his Lordſhip.

It

It is well known that Lord Selkirk, in the year 1803, formed a ſettlement on the iſland of Prince Edward, in the Gulph of St Lawrence, near the coaſt of Nova Scotia; and that he carried out from the weſtern Highland diſtricts, above eight hundred perſons of all ages, who previouſly had it in contemplation to emigrate to the United States. The miſrepreſentations generally circulated concerning his Lordſhip's motives in making this ſettlement, need hardly be mentioned. Suffice it to ſay, that he was accuſed of attempting to drain the Highlands of a conſiderable part of their population, and of acting under the force of political opinions, inconſiſtent with the proſperity of his native country. Thoſe who were ſufficiently acquainted with Lord Selkirk, laughed at ſuch accuſations, becauſe they were ſatisfied that whatever might be his Lordſhip's opinion of men and meaſures, none entertained ſentiments more liberal or juſt on every ſubject connected with the welfare of the community, and none whoſe private character and conduct could bear a more ſtrict and ſevere ſcrutiny. Thoſe who are not acquainted with his Lordſhip, may have their doubts removed by a peruſal of the preſent publication.

Lord Selkirk, at an early period of life, turned his attention to the ſtate of the Highlands; where, to a ſpeculative mind, a very extenſive field of inquiry was opened. The introduction of ſheep farming had recently taken place, and the inhabitants had ſhewn their marked averſion to that new and improved ſyſtem of huſbandry. The ſtyle of living had experienced a conſiderable change, and the Lowland manners and practices were making rapid advances among the Highland gentry. Their expences became greater as the value of money decreaſed, and it was neceſſary to turn their eſtates to the beſt account, ſo as they might be enabled to ſupport the rank in which they were placed. From the firm meaſures taken to ſuppreſs the Roſsſhire riots in 1792, the Highlanders had ſagacity ſufficient to diſcern, that the proſpect of remaining long in their old poſſeſſions was very uncertain, from their total inability to offer an equal rent with their competitors. Emigration was the reſource which they preferred. This proceeded to a very great extent; and, ere long, the Highland proprietors (eſpecially thoſe who were leaſt in the habit of reſiding on their properties) became panic-ſtruck, and were alarmed, leſt their eſtates ſhould become tenantleſs and waſte. The few to whoſe care the buſineſs of that numerous body, the Highland Society, was at the time committed, ſuggeſted the propriety of endeavouring to obtain ſome act of the Legiſlature to put a ſtop to emigration. On mature deliberation, they found that

that this was impoſſible; and they betook themſelves to the plan of impoſing ſuch regulations reſpecting the tranſportation of emigrants, as neceſſarily would deter the emigrant traders from freighting veſſels for the purpoſe of carrying off the people. Had the Highland Society conſulted ſuch Highland proprietors as are in the habit of reſiding on their eſtates, they would have found them very ready to part with their ſuperfluous population, although, in many inſtances, humanity would not permit them to turn them adrift. To ſhew that emigration muſt neceſſarily increaſe, in proportion to the improvement of the Highlands, and that it is of great conſequence to divert the tide from the United States of America to our own territory, are the objects of Lord Selkirk's publication. The latter object, we are told in the introduction, was brought into the notice of Government, with the view that eſtabliſhments might be formed of Highland emigrants, in our own territory, and at the public expence. His Lordſhip's propoſals, however, not having been favourably received, he reſolved, at his own riſk, to try the experiment; and having purchaſed a tract of lands in the iſland of Prince Edward, he applied himſelf to the difficult taſk of diverting thoſe, who were about to emigrate, from the United States, to our own colonies; and he has ſucceeded.

A very conciſe ſtyle of reaſoning has been adopted in this publication. Lord Selkirk has traced the changes which have taken place ſince the feudal times, in a clear, and, to us, a very ſatisfactory manner. In the Firſt chapter, a ſuccinct account of the ſtate of the Highlands in former times, in regard to the connexion of the chieftains with their tenants, is given. The value of an eſtate in thoſe times, was reckoned from the number of men the proprietor could call out. Agriculture was but a ſecondary conſideration, and, conſequently, the extent of land in tillage was ſmall, and the time occupied in the management of it but ſhort. Of courſe, when not engaged in warfare, the people were idle. The whole policy of the Highland gentry conſiſted in retaining the affections of their numerous tenantry; and while they wiſhed to be independent, they dared not raiſe their rents. A ſudden change of policy took place after the rebellion in 1745. Their numerous followers were no longer of uſe to the chieftains, either for defence or plunder. By degrees, the attachment of the gentry to the people, and of the people to the gentry, diminiſhed; and few inſtances can now be adduced of chieftains retaining any great number of the ancient adherents of their families, unleſs prompted thereto by vanity. The conſequence of this change in the population, through the prevalence of paſturage, ſheep-

farming and engroſſing of farms, is the ſubject of the Third chapter. It is there ſhewn, that, in conſidering the ſtate of the Highlands in regard to population, the ſure way is to inquire, not how many people the produce of the country will feed, but to how many employment can be afforded. When we conſider, farther, that the greateſt of all wants to a populous country, the want of fuel, neceſſarily prevents any aſylum for manufacturing induſtry being eſtabliſhed in the Highlands, we cannot wonder at the ſudden appearance of a great ſurplus in the population, the condition of the country being ſo ſuddenly changed.

'It has often happened,' ſays Lord Selkirk, 'that thirty or forty families have been diſpoſſeſſed all at once, to make way for a great ſheep-farm:—and thoſe who have attended to the preceding details will eaſily underſtand the dilemma to which every one of theſe people muſt be reduced. The country affords no means of living without a poſſeſſion of land: and how is that to be procured? The farms that are not already in the hands of the graziers, are all full of inhabitants, themſelves perhaps in dread of the ſame fate, and, at any rate, too crowded to make room for him. Should he, in ſpite of every difficulty, reſolve to earn his bread as a labourer, he can expect no employment in a neighbourhood, where every ſpot is occupied by many more people than are neceſſary for its own work; and if any caſual opportunity of employment occur, it is too uncertain to be depended upon. Let his induſtrious diſpoſitions be ever ſo great, he muſt, in the total want of manufacturing employment in his own neighbourhood, quit his native ſpot; and, if he do not leave the kingdom altogether, muſt reſort to ſome of thoſe ſituations where the increaſing demand for labour affords a proſpect of employment.' p. 45-6.

'To the diſpoſſeſſed tenantry, as well as to the cotters, who by the ſame progreſs of things are deprived of their ſituation and livelihood, two different reſources preſent themſelves. They know that in the Low Country of Scotland, and particularly in the manufacturing towns, labour will procure them good wages; they know likewiſe that in America, the wages of labour are ſtill higher, and that from the moderate price of land they may expect to obtain not only the poſſeſſion of a farm, but an abſolute property.

'Of theſe alternatives, every one, who is acquainted with the country, muſt admit that emigration is by far the moſt likely to ſuit the inclination and habits of the Highlanders. It requires a great momentary effort; but holds out a ſpeedy proſpect of a ſituation and mode of life ſimilar to that in which they have been educated. Accuſtomed to poſſeſs land, to derive from it all the comforts they enjoy, they naturally conſider it as indiſpenſable, and can form no idea of happineſs without ſuch a poſſeſſion. No proſpect of an accommodation of this kind can enter into the views of any one who ſeeks for employment as a day-labourer, ſtill leſs of thoſe who reſort to a manufacturing town.' p. 47-8.

The

The Fifth chapter treats of the political effects of emigration. The circumſtances which formerly rendered the Highlands a nurſery of ſoldiers, are ſhown not now to exiſt, and that the loſs of this national advantage does not depend on emigration. The tenantry having become independent, as much as the tenantry in any other part of the kingdom, their habits have been changed. They can now derive no advantage by ſending their ſons into the army: their farms will not be rendered more ſecure to them, nor will their rents not be raiſed, by their bribing their landlords with a few recruits. Some few popular characters may yet be able to raiſe a few men for their friends, but clanniſh attachment, on which recruiting formerly depended, is not to be found; and we cannot therefore look for its influence.

The Sixth chapter proves, that the emigration of the Highlanders is intimately connected with the progreſs of national proſperity, and not detrimental to manufactures nor agriculture. Were the people who emigrated, induſtrious workmen, their emigrating might readily be allowed to be prejudicial to the country. But as they are directly the reverſe, the effects of their leaving the country are alſo the reverſe. Although the population may be diminiſhed for a time in ſome diſtricts, yet the general population of the kingdom will not be found affected. It is an important fact, that on ſome of thoſe ſheep farms which were firſt eſtabliſhed, there are more inhabitants than there were before the introduction of ſheep. In theſe, we have an inſtance of the increaſe of population proceeding with the increaſing productiveneſs of the ſoil. And when we conſider, for a moment, that the increaſing quantity of wool which is annually exported from the Highlands, muſt require a proportional increaſe in the number of hands for manufacturing it, the melancholy forebodings of the depopulation of the country will vaniſh. How much better is it for the country to encreaſe its marketable productions, by indulging the people in their inclination to go either to America, or ſeek employment in the manufacturing diſtricts at home, than to place an everlaſting bar to improvement, by ſubdividing the land into minute portions, and encouraging ſloth and immorality, by permitting the illicit diſtillation of ſpirits!

The abſurdity of Highland proprietors crying out againſt emigration, when it is evidently their own handywork, is forcibly pointed out.

Chapter Seventh treats of the means that have been propoſed for preſerving the population of the Highlands, ſuch as the improvement of waſte lands, fiſheries, manufactures. Theſe, it is ſhewn, cannot obviate the neceſſity of emigration.

The tenantry, in almoſt every inſtance, will emigrate, rather than degrade themſelves by deſcending to undertake the cultivation of a waſte. The poor miſerable cotters are the only deſcription of people who can be got to ſettle on theſe lands. But as ſoon as they have improved ſo much as is ſufficient for the maintenance of their families, their half-formed habits of induſtry relax into indolence: and, in all probability, when they have improved as much waſte land as will form a good farm, the proprietor may remove them to make room for ſome man of capital, and then their condition becomes worſe than before. With reſpect to the fiſheries, we have ſome important obſervations. Without detailing them, we ſhall be content with obſerving, that we truſt they will be noticed by thoſe who are intereſted in the ſucceſs of the fiſheries. We cannot, however, leave this ſubject without tranſcribing the account of the village eſtabliſhed by Mr M'Lachlan.

'It is with pleaſure I learn' (ſays his Lordſhip) 'that the practicability of this ſuggeſtion has been aſcertained by experimental proof in a village on Loch Fyne, eſtabliſhed by Mr Maclachlan of Maclachlan. That gentleman, finding himſelf a number of years ago under a neceſſity of thinning the population on ſeveral of his farms, ſelected ten or twelve families of the pooreſt cotters,—men, however, whom he knew to be capable of laborious exertion. Theſe he fixed in a ſituation on the ſhore, where he furniſhed them with two ſubſtantial fiſhing boats of the beſt conſtruction, with all their apparatus, on condition that their coſt ſhould be repaid to him from the produce of their induſtry. Anxiety to diſcharge their debt ſtimulated theſe men to exertion, and a ſeaſon or two of ſucceſsful fiſhing left them free proprietors of the boats they had been furniſhed with. The proprietor was ſenſible that, from the habits of theſe people, they would think it impoſſible to live without ſome land; and that, in fact, from the want of markets for purchaſing proviſions, ſuch an accommodation was to a certain degree indiſpenſable in the preſent ſtate of the country. He therefore laid out a part of a farm for them, and, to avoid diſheartening them, allowed them to poſſeſs it for a year or two at an inadequate rent. By degrees, however, he raiſed it to its full value, ſo that the poſſeſſors cannot truſt to the land for their ſupport, having no means to pay their rent unleſs they are induſtrious in their fiſhing. Other inhabitants have likewiſe been brought to the village, and the original portions of land ſubdivided, ſo as to become to every individual a mere accommodation, and an object entirely ſubordinate. When the further progreſs of the country towards a commercial ſtate leads to the eſtabliſhment of markets for proviſions, theſe people, being already brought to ſuch a degree of advancement, may be entirely deprived of land without any fear of their being diſconcerted by the change. The ſucceſs of the firſt fiſhermen has been ſuch, that they have fitted out a number of additional boats, of the beſt conſtruction,

at

at their own charge; and ſeveral of them have accumulated conſiderable ſums of money.' p. 101.–103.

The natural diſadvantages of the Highlands, ſeem to exclude every proſpect of the eſtabliſhment of manufactures. We can only look for them on ſome parts of the coaſt, and there on a ſmall ſcale. The eſtabliſhment of manufactures, Lord Selkirk obſerves, might affect the migration of thoſe claſſes who now wiſh employment in the old eſtabliſhed ſeat of induſtry; but to the ſmall tenants, the ſame objections which occur againſt a manufactory in the ſouth, would apply equally to a ſimilar employment in a ſituation a little nearer home. There is no probability, therefore, that ſuch eſtabliſhments could have any effect on thoſe who are inclined to go to America.

In chapter Eighth, emigration is ſhewn to have no permanent effect on population; that legal reſtrictions on emigration are not only uſeleſs, but, from the diſcontents which prevail in the Highlands, dangerous. Theſe diſcontents have of late increaſed, in no ſmall degree, from the violent meaſures which have been adopted by the Exciſe to ſtop illegal diſtillation. Poor people, whoſe all did not exceed forty or fifty pounds, have been fined 400l., and are left ſtarving in jail. Some meaſures, we underſtand, are to be taken, in order to bring to the notice of Government the hardſhips which the Weſtern Highlands endure from the preſent ſtate of the Exciſe laws. *

In chapter Ninth, the prejudices of the Highland proprietors, and

* We are happy, however, to have it in our power to obſerve, that, in ſome diſtricts, diſcontent is diſappearing. A few native Highlanders are beginning to adopt a better ſyſtem of agriculture; and ſome have conſiderable flocks of ſheep. One inſtance, we cannot help recording, as it holds out the agreeable proſpect, that by the time the riſing generation of Highlanders are able to undertake the mangement of farms, they will have loſt the prejudices which, in their early age, they have imbibed, from ſeeing their own friends profiting by conduct which they were taught to conſider as madneſs. A Highland farmer in the north, was prevailed upon by his landlord to ſow a very ſmall corner of a field deſtined for potatoes, with turnips. He found that the produce was ſo beneficial to him, that the next year he ſowed three acres in drills. On a moderate calculation, he himſelf found that between ſaving and direct profit, theſe three acres had given him above 30l. When his landlord aſked him how he liked turnips after this trial, he firſt gave moſt ſincere and hearty thanks; and then ſaid, that were he offered the higheſt premium ever given for agricultural improvement, he would not relinquiſh the culture of turnips. He has this ſeaſon about eight acres of them, and a few of his neighbours ſmall patches.

the miſtakes from which they have ariſen, are pointed out. The conduct of the Highland Society, and the Emigration Bill, are examined in chapter 10th. Theſe, with the two laſt, which ſhew the importance of emigration to our colonies, and the means of inducing emigrants to go to them, inſtead of the United States, and detail the proceedings and ſucceſs of Lord Selkirk in his undertaking, are highly intereſting. But our limits will not permit us to indulge ourſelves, by offering an abridgement of them to our readers. To every one, whether connected or not with the Highlands, who delights to watch over the improvement of his country, this performance will be intereſting. The modeſty which characterizes it, reflects as much credit on its noble author, as the ability with which he has treated his ſubject; and we hope that every Highland proprietor will peruſe this work; not that we wiſh it to have the effect of inducing them to drive their tenantry from their eſtates, but of perſuading them to adopt prudent meaſures in the management of their properties, that the people may have time to prepare, and may leave them without ſhewing any diſcontent. When all things are conſidered, it is but common juſtice to give the Highlanders notice a year or two before their removal, for two reaſons eſpecially: firſt, that they may have time to reflect on what courſe they are to purſue, and to prepare for commencing a new mode of life,—for leaving idleneſs, and entering on a life of induſtry.

Upon the whole, every meaſure tending to retard emigration, unleſs calculated to procure employment and maintenance to the people, muſt be characterized as abſurd and impolitical. It rarely happens, that thoſe comfortably ſituated at home are diſpoſed to emigrate; therefore, to impede the removal of ſuch as are not comfortably ſituated, or who cannot find employment, ſeems a meaſure equally fooliſh and dangerous as corking up the human body would be. The political body ſtands in need of evacuations as well as the human; and reſtrictions on either, neceſſarily produce the like fatal and diſagreeable conſequences.

C.

BRANCH

BRANCH III.

Agricultural Intelligence.

The corn crops, particularly that of wheat, were in a critical ſtate when our laſt Number went to preſs; but fine ripening weather having followed, the whole were ſafely harveſted; and, from the returns tranſmitted to us, it appears that the general amount of the produce of this year may be eſtimated as fully equal to that of an ordinary average. We are not, however, from this to ſuppoſe, that the produce will exceed what is required for anſwering the demand, or, in other words, that, after ſupplying home conſumption, a certain quantity will remain for exportation. So far from this being the caſe, we have our doubts whether the crop, good as it is, will be ſufficient for feeding our own people. Population has increaſed conſiderably; the unproductive hands, who muſt be fed at a greater coſt than if they ſupported themſelves, are ſo numerous, and luxury has advanced with ſuch rapid ſtrides among every claſs, that perhaps double the quantity of grain is now required to ſatisfy the demand than was neceſſary thirty years ago. Whether we are preciſely right or not in this general concluſion, is a matter of ſmall importance. It is ſufficient for our argument, that the conſumption of the country is much augmented, when compared with that of former years.

What we have ſtated with regard to grain, is ſtill more applicable to butcher-meat, an article now in common uſe amongſt all deſcriptions of people. The breed of cattle and ſheep is undoubtedly much improved; the mode of rearing and feeding them is equally meliorated; and yet the markets, except at ſome particular periods, rarely experience an over-ſupply. The only legitimate inference from theſe premiſes is the one already made, namely, that the demand, owing to the circumſtances condeſcended upon, is of late materially increaſed.

The markets for farm-produce, till lately, were tolerably ſteady, and even at this time have not dropped much. Of wheat, a full ſupply has been thraſhed out in every diſtrict, which, joined to the ſtore of imported foreign grain on hand, has rather occaſioned a temporary glut. The quality of wheat, this ſeaſon, is more variable than in the two preceding years. Some of it is mildewed; many fields were lodged by the rains of July; but, from being univerſally well ripened and harveſted, the produce, when mealed, is healthy and nutritious, and not defective in quantity. The other grains are equally ſound; and inſtances, of a greater return from oats than ever known, are numerous. The butcher market is rather lower than in the preceding quarter, though lean ſtock are fully as high as laſt year. Ewes of good quality are ſeveral ſhillings per head dearer; and the demand for the improved breeds has been greater than uſual.

A general rise of harvest wages took place this season in every district; and, on some farms, more money was expended in cutting the crop than formerly was paid to the landlord under the name of rent. The weather, however, being excellent, the rise was less felt than necessarily would have happened under different circumstances. Opportunity was allowed for executing operations in the most perfect manner; and few days of idleness intervened betwixt the commencement and conclusion of harvest work.

Turnips, which at one time were expected to be a heavy crop, have latterly sustained much injury from the severe drought of autumn, and will now prove, in general cases, to be greatly inferior to what was looked for. It is believed they will be less able to withstand frost when so much mildewed, than if they had remained healthy and vigorous. Potatoes also suffered in many places, though, on the whole, this esculent is sufficiently plentiful, and, in almost every case, of excellent quality.

We noticed in our last Number, that the Publishers of this work, in imitation of the laudable example set them by Sir George Stewart Mackenzie of Coul, Baronet, had authorised us to offer a premium of Five Guineas for the best essay on the Culture of Wheat; and with pleasure we now intimate, that Sir George requests us to offer a gold medal of Ten Guineas value, or that sum in money, to the author of the best essay on the following important question—important it certainly is to Highland proprietors, and every one who wishes to settle in these districts.

'What is the nature and extent of the encouragement which ought to be given to a South-country farmer who settles in the Highlands, and undertakes to manage the premises in a husbandman-like manner, or, more particularly, according to soil, climate, and other local circumstances; it being understood that the land is presently in the hands of small possessors, and, consequently, in bad condition?'

While we bestow our mite of praise on the active exertions of the worthy Baronet to promote the improvement of the country, and recommend the important question adduced by him to the consideration of our friends, we cannot avoid noticing that many subjects are embraced therein, which will require the most serious and deliberate investigation. Security of possession to the tenant, and comfortable accommodation, are at first sight necessary; but the prestations and obligations which he ought to come under, are not so evident; and, in fact, ought to be regulated by local circumstances. As, for instance, whether he should be bound to enclose and improve moorish soils?—to lime a certain quantity thereof, or be subjected to any set of restrictions during the lease, or at its conclusion?—are questions not easily solved. Competitors will, however, hold these things in view, and give such opinions as to them shall appear best calculated for the benefit of both parties, and the interest of the country. Where extensive improvements are wished for in waste or uncultivated districts, it has always appeared to us, as the best way, to connect the tenant's interest with his duty,

or,

or, in other words, to give a leaſe renewable at certain periods, providing the meliorations condeſcended upon have been executed. Landlords undoubtedly ſacrifice a portion of their intereſt in this way; but, ultimately, the original loſs is repaid to them, or their heirs, with double or triple advantage. A landlord muſt either improve his land, in this way, by others, or do it himſelf; and which of the two ways is preferable, ſhall not, at this time, be inveſtigated.——*Oct.* 25.

Extracts from Private Correspondence.

SCOTLAND.

Letter from a Gentleman in Berwickſhire, October 5. 1805.

'Harvest, in this part of the country, is now generally over, and the crop in capital order, and ſafe headed. The ſeaſon has been propitious, equal to, if not exceeding, all former ones in our remembrance. Upon the whole, the crops, eſpecially of wheat, are bulky, and ſeem productive; and I believe a much larger breadth of this grain, eſpecially ſpring-ſown after turnips, than in any former year, has been reaped. For ſome years, the culture of barley has been much on the decline; under an idea that wheat pays much better, and is not exhauſting, under our plan of alternate huſbandry and paſture. The oat crop is generally reported to be light; the barley middling; peas and beans coruy, but not bulky.

'In conſequence of the exceſſive and long continued dryneſs of the paſt ſummer and autumn, the turnip crop has ſuffered very much, eſpecially upon thin ſoils with dry bottoms. Large extents of that uſeful plant have made no progreſs whatever during the months of Auguſt and September, and are now ſickly, pale, and withered; inſomuch, that good turnips are expected to let uncommonly high, while, two months ago, owing to the large extent ſown in this country, the common opinion was, that their price would neceſſarily be unuſually low.

'The fallow lands have been moſt uncommonly well wrought, and are generally very clean and fine; but, from the extreme drought, they are almoſt entirely deſtitute of moiſture; and many farmers are afraid to ſow, leſt the ſeed periſh.

'From the ſame want of moiſture, it is hardly poſſible to break up the ſtubbles, either thoſe intended for next year's turnip and fallow, or peas or bean lands for wheat; and paſtures are rather falling off, though the ſtock is univerſally in good order.

'Store ewes for next year's lamb, ſold very high at laſt St Ninian's fair. Well-bred ewes as high as fifty pounds a ſcore; under-bred ſhort ewes, from thirty to forty, according to goodneſs. Fat ſheep by no means bear an equal proportion.

'Berwick corn-market ſtarted very high this year; and on Saturday the 28th September, good new wheat ſold from 55s. to 60s. our boll of ſix buſhels. This day, 5th October, ſales are rather dull, and a few ſhillings lower; ſay from 50s. to 55s.; good barley, 28s.; and potato oats 22s.—all by the ſame boll.

'The hay crop was uncommonly good, and well got: Price 5d. or 6d. the ſtone of 22½ pounds.

Banffſhire

Banffshire Quarterly Report.

Soon after the date of last report, rainy weather ensued, which retarded hay harvest, lodged many fields of corn, and kept the ripening process, in the upland district, much later than otherwise would have happened. General harvest took place about the middle of September; but, as no more than a fortnight of steady weather has been got since its commencement, there remains, at least, one third of the crop of this county in the fields. Conjectures are at variance with regard to the produce; but, should it be got safely stacked, it can scarcely be reported as equal to a fair average. Oats are bulky; but will not yield so much of the perfect article as last year's. Barley is defective; and peas, in few cases, will give three returns.

Cattle continue to go off at moderate prices; those, in tolerable condition, fetch from 7*s.* to 8*s.* per stone Amsterdam, sink; and there will be abundance of *keep* for those that remain on hand. Turnips are a good crop; but the want of a market for fat cattle, will cause feeding for the butcher to be abandoned by many farmers. From a combination of circumstances, dealers may almost depend on finding a stock of cattle in Banffshire, next spring, superior to any that has been sent from the district in former times.

The prices of grain are not yet established; nor is much inquiry making about purchases in the district. There is no regular corn-market within its bounds, which keeps farmers in the dark as to the value of grain; and few being provided with granaries, conditional bargains are often, from necessity, made with the merchant. The lower part of the county, which is well cultivated, produces as good oats in ordinary seasons as are raised in the southern counties, though, from two circumstances, the grain here is characterized as of inferior quality by the generality of importers at a distance. 1. Many farmers have a custom of selling none but their worst oats, retaining the best at home, for making into meal, and other purposes. 2. A baneful practice is permitted in the manufacturing of meal, namely, mixing barley with the oats, which is sanctioned by the merchant to a certain extent, though generally exceeded by the manufacturer. From these two circumstances, very injurious consequences necessarily fall upon the farmer; for the merchant seeing no grain but what is of inferior quality, and no meal but what is adulterated and of a bad flavour brought from the county, naturally infers, that soil, climate, or cultivation, disqualifies it from producing good grain. If the mixing of barley amongst oats, when manufactured into meal, was prohibited, it is probable these evils would find a remedy. At all events, if the mixture was given up, the meal manufactured here would recover its character, it being well known, that though mixed meal may pass at first, yet afterwards, when kept, it is highly disagreeable.——*Oct.* 18.

Letter from a Gentleman in the District of Carrick, October 22.

'The weather in this part of the country, from the beginning of July to very near the end of September, was generally wet, with an uncommon

mon degree of warmth: this occaſioned a moſt luxuriant vegetation, and was favourable to the growth of oats, which is yet our ſtaple crop. For a month paſt, we have had a courſe of the fineſt weather ever known at this ſeaſon, there being only about one day's ſerious rain during all that time. This has occaſioned the harveſt to be finiſhed in the beſt manner, and the ground, for winter crops, to be put in a ſtate of complete preparation.

'Our crop of oats is generally more bulky than laſt year, though there are ſaid to be ſome exceptions. The wheat crop, from the extreme cold and froſty weather in the beginning of the ſummer, when it extends its roots and branches, is rather thin, but of good quality. This is ſaid to be the caſe with the bear and barley, owing to the ſame cauſe. Beans are good, and peas are luxuriant in ſtraw, but not in fruit. Turnip is every where good, and no complaints of fly or caterpillar have been heard. Potatoes are fully a third, and, in many places, a half more than laſt year. Upon the whole, our crop may rather exceed an average. There is only one thing which the farmers are apprehenſive about, and that is the productive quality of their oats; and, ſo far as they have made the experiment, there would ſeem to be ſome ground for apprehenſion. Oats, which uſed to yield from 20 to 25 and 26 pecks of meal per boll, (8 Winchester buſhels), are ſaid to be deficient from 3 to 5 pecks in the boll; and this is reported to be the caſe, too, all to the ſouth of this. Two reaſons are aſſigned for this, (for we muſt ſtill have reaſons for every phenomenon,—acting upon the Lucretian ſyſtem, of peeping behind the curtain, that we may ſupport our own vanity, inſtead of admiring and adoring the manifold wiſdom of God diſplayed in all his works); 1. The rapid and protracted vegetation in conſequence of the continued warmth and moiſture, thereby increaſing the thickneſs of the huſk, and diminiſhing the kernel; Or, 2. The great quantity of electrical or elementary fire with which the atmoſphere abounded, during the months of Auguſt and September, occaſioning the grain to ripen too ſuddenly before it was thoroughly matured. Perhaps there may be a good deal of truth in this laſt reaſon. But whatever may be the cauſe, the fact ſeems to be certain and univerſal, both here and to the ſouth of us; and, in that caſe, the crop of oats, inſtead of being abundant, as was ſuppoſed, may be found no more than ſufficient.

'The paſture mended, after the rains came on, remarkably; and many people, who ſaved their aftermath of ſown graſs, had nearly as much bulk from the ſecond as they had from the firſt cutting. The ſale of cattle and ſheep, of courſe, was briſk, and the prices rather advanced. The oat meal, which I believe is looked upon as the regulating ſtandard, has remained ſteady in the county town for a long while at 18d. the peck. The prices of wheat, bear and barley, cannot be ſaid to be yet fixed; but what has been ſold ſince harveſt, is at a reduction of 4s. or 5s. the boll, though it is expected it will not continue ſo, as theſe crops are not at all any way remarkable, nor by any means ſo good as laſt year.

'Agriculture

'Agriculture is making rapid progreſs through this country, notwithſtanding the obſtacles it has to encounter from the advance in the price of farm labour, of rents, and of public burdens. This improved mode of culture, together with the increaſed and increaſing value of farm produce, creates an eager demand for farms, and ſuch an increaſe of rent as, fifty years ago, an angel from heaven would not have been believed, if he had foretold it. Double, triple, quadruple rents are aſked, and given, upon a new leaſe. This may do, ſo long as trade and manufactures are protected and flouriſh, and if the property tax, and the other ſpecific burdens accruing from the war were once removed; but, conſidering the precarioufneſs of theſe, and the other nice hinges of wind, weather, and ſeaſons, upon which agriculture turns, farmers may be conſidered as the moſt intrepid and adventurous ſet of men exiſting.

'Ye guardians of the public, protect and encourage them; they are your ſupport; and the welfare of ſociety depends upon their proſperity!!'

Letter from Falkirk, October 24.

'Harvest was ſomewhat later in beginning than laſt year; but, from a long continued tract of very fine weather, it was as early concluded, and the crop ſecured in excellent condition. Wheat is of good quality, and uncommonly bulky; ſhould it turn out well on the barn floor, which as far as trials yet go, it promiſes to do, it will be conſiderably above an average crop. Beans are alſo above an average crop in bulk, but are not expected to give a proportional quantity of grain. Barley and oats, eſpecially the former, are probably below an average; and, from the trials yet made at the mill, oats don't promiſe to meal well; and this deficiency is thought greater in the potatoe than in the common oats comparatively. Potatoes are an ordinary crop, but every where of ſuperior quality. Combining all theſe circumſtances, I think we are warranted in concluding, that, upon the whole, we have gained a full average crop, which, in the preſent ſtate of affairs on the Continent, and the little probability of ſupplies from that quarter, may be reckoned a fortunate affair. From theſe things, an opinion, often of late maintained, will probably be brought to the teſt this year, that this country, with an average crop, cannot ſupply her own conſumption.

'Harveſt work was very expenſive during the hurry of it; wages for women reapers being 2s. 6d. per day with victuals, which cannot now be reckoned leſs than 9d.; and men 3s. Wheat is ſown this ſeaſon to a greater extent than was ever known in the Carſe; it has been put into the ground in the fineſt condition, and a vigorous healthy braird is every where to be ſeen. The wheat land has indeed harrowed too fine, which we reckon unfavourable for ſtanding againſt the ſpring froſts. Young graſſes are very thriving, and winter ploughing is far advanced. Our corn-market continued pretty ſteady, except in the article of wheat, which has lately fallen conſiderably. The preſent prices may be ſtated as follows:—Wheat 35s. per Linlithgow ſtandard boll, Beans 25s., Barley 36s., Potatoes 6s. all per Stirlingſhire boll; Oatmeal

meal 17½d. per peck of eight pounds Dutch. Our price for Hay turned out better than was looked for at the time of laſt report, having ſettled at 8d. per ſtone. In the butcher market, there has been little fluctuation. Beef at preſent, and Mutton, 8d. per pound Tron of 22 ounces Engliſh. At the laſt Tryſt, there was about the uſual number of cattle, ſales were briſk, and good prices obtained.

'In a former report, I made ſome remarks on the property act, more particularly as it affected the tenantry. Although a tax on unequal principles, and exacted in a peculiar way from one particular claſs of the community, while moderate, may be ſubmitted to with little complaint, yet, when of a nature to be increaſed, (and few will doubt that the one in queſtion muſt neceſſarily be increaſed year after year), it may become in time a ſevere grievance. It is therefore to be regreted, when amendments might reaſonably have been looked for, that, in the new act, the old principle of rent paid the landlord, in place of real income, is ſtill to be continued as the criterion of the tenant's means of paying the tax. By this ſingular and arbitrary mode of aſſeſſment, in contradiction to the general ſpirit of the act, although tenants may not, in every inſtance, pay more than their fair contribution; yet, from the nature of things, it muſt often happen, that they will be obliged to pay the tax without poſſeſſing the means from which alone it is expected to be derived in other claſſes. In order to put this in a ſtriking point of view, and at the ſame time as briefly as poſſible, I beg leave to ſtate a caſe that muſt often happen. A perſon aſſeſſed under Schedule D, that is, on real profits or gains, is overtaken by ſome diſaſter which renders him unable to pay the tax, at leaſt from the only ſource the act looks to for payment in his caſe, viz. clear profits or gains. From principles of juſtice, as well as from the very ſpirit of the act itſelf, if, on a proper ſtatement of the facts, his caſe is made out to the ſatisfaction of the Commiſſioners, an abatement of the whole, or part of the duty, as may be, neceſſarily follows. Place a tenant under ſimilar circumſtances, and ſurely it will not be ſaid that his crops are exempted from many accidents and numerous occurrences which will greatly deteriorate them, and no ſuch relief can be allowed him. Another caſe which muſt often preſs hard on a tenant while he is aſſeſſed according to rent:—He takes a farm in bad condition, which he however hopes to make ultimately productive, and therefore goes to work by draining, fallowing, liming, and ſo on. Under ſuch circumſtances, he cannot poſſibly derive any income or profit from the farm for ſome years, but muſt, on the contrary, be out of pocket, yet, as he pays a rent to his landlord, he muſt alſo pay a proportional property tax, which inconteſtibly muſt be derived from his capital. Moreover, in a few years, in conſequence of theſe expenſive outlays, his farm begins to make the expected returns; but he is no longer to be aſſeſſed by the old ſtandard of rent. Seven years are now elapſed; he muſt therefore, in future, be taxed by the value that may happen to be ſet on his premiſes. 'Tis pity thoſe gentlemen who ſo firmly, and ſucceſsfully reſiſted an addition to the tax on

farm

farm horſes, had not attentively conſidered the property act, as it applied to tenants, otherwiſe they would ſurely have made ſome attempt at amendment here; and had they not ſucceeded, it would have at leaſt afforded the ſatisfaction of making known the reaſon, why ſuch a deviation from the general principle of the act was neceſſary in regard to the tenantry.'

Eaſt-Lothian Quarterly Report.

THE operations of this quarter, with a few exceptions, were carried on ſucceſsfully; and, though hands were ſcarce, and wages uncommonly high, theſe circumſtances were in a great meaſure compenſated by the fineneſs of the weather, which permitted the cutting and ingathering of the crop to go on in the moſt rapid and huſbandman-like manner. The wheat is of great bulk; and though, in many inſtances, partially damaged by the July rains, yet, on the whole, cannot be conſidered as defective, either in quantity or quality. Barley may be reported as fully equal to an average; but the quantity ſown in the county for two or three years paſt, has been ſo much reduced as to render this article an object of but little importance to the great body of farmers. Oats were cloſe on the ground, and well headed; therefore, though not bulky, prove very productive; and the return in meal has this ſeaſon, in many inſtances, exceeded what was ever known, particularly from thoſe of the potato variety. Peas and beans are, in moſt caſes, below an average, the damage ſuſtained from a high gale of wind in the firſt week of Auguſt never having been overcome.

Markets have been fully ſupplied with new grain for ſeveral weeks, eſpecially with wheat, of which article a greater quantity has been ſold at Haddington for a month paſt than uſually happens at this ſeaſon. Prices have been much regulated by the condition of the grain; and it is a curious circumſtance, that a difference of weight, not exceeding 3 lib. per firlot, actually occaſioned a difference in price to the extent of 5s. or 6s. per boll. Indeed the farmer who intends to thraſh wheat at the end of Autumn or beginning of Winter, ought to be careful to have it ſtacked in good order, otherwiſe he neglects his own intereſt. Of oats, a ſcanty ſupply has hitherto appeared; but, as the ſeaſon advances, greater quantities will undoubtedly be preſented.

This has been a tolerable graſs ſeaſon; and the number of cattle and ſheep fed, amply ſupplied the butcher's demand. Lean cattle have brought much the ſame prices as laſt year, but ſheep are rather higher. Turnips, at one time, promiſed to be a moſt abundant crop; but a mildew lately ſeized them, by which their quality muſt be neceſſarily much impaired. The ſowing of wheat is far advanced, and hitherto has been performed under the moſt favourable circumſtances. Every exertion is making to ſow as much of this valuable grain as poſſible; and the goodneſs or badneſs of the weather at this period of the year, is, on that account, of infinite importance to the farmers of the diſtrict.—*Oct.* 25.

Accounts

Account of WHEAT *sold in* HADDINGTON MARKET, *for ready money, from November 2d 1804, to October 25th 1805; with the Weekly, Monthly, and Annual Average Price thereof; transmitted by* Mr TODRICK, *clerk of the market.*

Date.	*Quantity.*	*Value.*			*Weekly Average.*			*Monthly Average.*		
1804.	BOLLS.	£.	s.	d.	£.	s.	d.	£.	s.	d.
Nov. 2.	865	1690	3	6	1	16	$9\frac{3}{12}$			
9.	964	1903	11	6	1	19	$5\frac{9}{12}$			
16.	593	1367	5	0	2	6	$1\frac{4}{12}$			
23.	733	1585	16	0	2	3	$3\frac{5}{12}$			
30.	443	949	0	3	2	2	$10\frac{8}{12}$			
	3598	7395	16	3				2	1	$1\frac{3}{12}$
Dec. 7.	472	1060	18	6	2	4	$11\frac{5}{12}$			
14.	345	780	10	6	2	5	$2\frac{11}{12}$			
21.	502	1078	19	0	2	2	$11\frac{9}{12}$			
28.	464	983	13	6	2	2	$4\frac{9}{12}$			
	1783	3904	1	6				2	3	$9\frac{6}{12}$
1805.										
Jan. 4.	414	859	10	•	2	1	$6\frac{3}{12}$			
11.	546	1115	14	6	2	0	$10\frac{5}{12}$			
18.	539	1089	4	6	2	0	$4\frac{9}{12}$			
25.	415	892	4	6	2	2	$11\frac{11}{12}$			
	1914	3956	13	6				2	1	$4\frac{4}{12}$
Feb. 1.	405	962	12	6	2	7	$3\frac{5}{12}$			
8.	638	1397	15	0	2	3	$9\frac{9}{12}$			
15.	570	1292	10	0	2	5	$4\frac{2}{12}$			
22.	513	1159	11	0	2	6	$2\frac{4}{12}$			
	2126	4812	8	6				2	5	$3\frac{3}{12}$
Mar. 1.	485	1111	18	0	2	5	$10\frac{3}{12}$			
8.	528	1263	16	3	2	7	$10\frac{5}{12}$			
15.	307	753	12	6	2	9	$0\frac{9}{12}$			
22.	243	603	1	6	2	9	$7\frac{7}{12}$			
29.	229	563	16	0	2	9	$2\frac{10}{12}$			
	1792	4296	4	3				2	7	$11\frac{4}{12}$
Apr. 5.	560	1372	8	0	2	9	$0\frac{3}{12}$			
12.	520	1244	11	6	2	7	$10\frac{5}{12}$			
19.	262	615	11	0	2	6	$11\frac{10}{12}$			
26.	478	1067	4	0	2	4	$7\frac{9}{12}$			
	1820	4299	14	6				2	7	$2\frac{11}{12}$

Date. 1805.	*Quantity.* BOLLS.	*Value.* £.	s.	d.	*Weekly Average.* £.	s.	d.	*Monthly Average.* £.	s.	d.
May 3.	447	946	8	6	2	2	$4\frac{1}{13}$			
10.	561	1163	5	6	2	1	$7\frac{9}{13}$			
17.	441	925	9	0	2	2	$5\frac{1}{13}$			
24.	593	1257	17	0	2	2	5			
31.	471	1007	4	6	2	2	$9\frac{3}{13}$			
	2513	5300	4	6				2	2	$2\frac{3}{13}$
June 7.	487	1049	6	0	2	3	$1\frac{1}{13}$			
14.	551	1166	8	0	2	2	4			
21.	590	1215	5	6	2	1	$4\frac{4}{13}$			
28.	524	1090	7	0	2	1	$7\frac{6}{13}$			
	2152	4521	6	6				2	2	$0\frac{2}{13}$
July 5.	350	741	14	6	2	2	$4\frac{7}{13}$			
12.	486	1078	7	0	2	4	$4\frac{6}{13}$			
19.	395	902	6	0	2	5	$8\frac{1}{13}$			
26.	285	695	6	6	2	8	$9\frac{7}{13}$			
	1516	3417	14	0				2	5	1
Aug. 2.	429	1046	16	6	2	8	$9\frac{7}{13}$			
9.	365	889	3	6	2	8	$8\frac{7}{13}$			
16.	461	1038	14	0	2	5	$0\frac{9}{13}$			
23.	387	886	7	6	2	5	$9\frac{8}{13}$			
30.	330	768	14	6	2	6	7			
	1972	4629	16	0				2	6	$11\frac{5}{13}$
Sept. 6.	464	1031	15	6	2	4	$5\frac{8}{13}$			
13.	530	1089	10	6	2	1	$1\frac{4}{13}$			
20.	764	1455	7	0	1	18	$1\frac{9}{13}$			
27.	792	1501	11	9	1	17	11			
	2550	5078	4	9				1	19	$9\frac{11}{13}$
Oct. 4.	954	1803	10	0	1	17	$9\frac{10}{13}$			
11.	928	1633	15	6	1	15	$2\frac{6}{13}$			
18.	884	1525	1	0	1	14	6			
25.	840	1463	5	9	1	14	10			
	3606	6425	12	3				1	15	7

ABSTRACT.

	Monthly Quantity.	*Monthly Produce.*			*Monthly Average.*			*Annual Average.*		
	BOLLS.	L.	s.	d.	L.	s.	d.	L.	s.	d.
November	3598	7395	16	3	2	1	$1\frac{3}{172}$			
December	1783	3904	1	6	2	3	$9\frac{6}{172}$			
January	1914	3956	13	6	2	1	$4\frac{1}{172}$			
February	2126	4812	8	6	2	5	$3\frac{3}{172}$			
March	1792	4296	4	3	2	7	$11\frac{4}{172}$			
April	1820	4299	14	6	2	7	$2\frac{11}{172}$			
May	2513	5300	4	6	2	2	$2\frac{7}{172}$			
June	2152	4521	6	6	2	2	$0\frac{3}{172}$			
July	1516	3417	14	0	2	5	1			
Auguſt	1972	4629	16	0	2	6	$11\frac{5}{172}$			
September	2550	5078	4	9	1	19	$9\frac{11}{172}$			
October	3066	6425	12	3	1	15	7			
	27342	58037	16	6				2	2	$5\frac{1}{172}$

Letter from the County of Inverneſs, October 23.

'CATTLE, of late, have rather advanced in price; and the demand from the drovers ſtill continues. Wedder ſheep have alſo advanced about ten per cent. higher than laſt year, the preſent price being from 20s. to 22s. per head. Our harveſt is not yet altogether finiſhed even in the lower diſtrict, and in the hills it is not half over, owing to the continued rainy weather from the end of July to the middle of September. The corn crop ſeems, however, to be a fair average, though the wheat is generally conſidered as imperfectly filled. Turnips are not ſo weighty as was expected. This branch of huſbandry has of late increaſed conſiderably in the diſtrict.'

Letter from a Gentleman in a neighbouring Diſtrict, addreſſed to the Conductor.

'AFTER leaving your houſe, we made a tour through the reſt of Eaſt Lothian, and were highly gratified with the huſbandry of that diſtrict, which, on the whole, is equal to any thing of the kind to the ſame extent which I have witneſſed in my ſeveral journies through the iſland. At the ſame time, I obſerved ſome fields which did not keep pace with the general appearance, and attached blame to the occupiers. Paſturage ſeems now to be a great object, and is conducted upon the improved plan of retaining a full bite, though I would like to know whether the growth in the next ſpring, eſpecially on dry ſoils, is more abundant than when it is eaten cloſer down.

'However much the preſent age ſupports the ancient character of Eaſt Lothian for good farming, it ſeems little improved in the art of road-making. If the diſtreſs of travellers were particularly ſtudied, it could not be more effectually attained than in the mode adopted in repairing the roads, both eaſtward and weſtward of Dunbar, where expence ſeems to be increaſed for no other purpoſe than fruſtrating the intention of making roads. If, in place of ſpreading unequal-ſized ſtones to the

deepneſs of ſix or eight inches, as is preſently done to the great annoyance of every paſſenger, the roads were ſcraped bare, and a ſlight covering of materials ſufficiently broken were applied, they would, from the firſt, prove not only more comfortable, but likewiſe freer of ruts and dimples afterwards, than when repaired according to the actual ſyſtem; whilſt one half of the expence would be ſaved in the firſt inſtance, and funds left for going oftener over them. The road through Tyningham wood ſeems to be repairing on the ſame erroneous principle, of laying a large quantity of materials on at once, than which nothing can be worſe judged; and, with your permiſſion, I mean, on a future occaſion, to offer a few hints on the art of road-making; an art much improved in many diſtricts, but which ſeems to be taking a retrograde courſe in the one alluded to.'

Letter from a Gentleman near Langholm, October 23.

'THE autumn quarter has in general been favourable to the views of the farmer. The agreeable mixture of ſunſhine and ſhowers, during the month of Auguſt and beginning of September, was highly propitious to the nouriſhment of grain, both in the plant and in the ear. We had however ſome heavy rains during the firſt weeks of September, after the corn was begun to be cut, which made things for ſome time have a very unpromiſing appearance. From the 20th of that month, we have had moſtly fine dry weather; and the crops were never better got in, and in ſo ſhort a period.

'Harveſt was generally finiſhed here about three weeks ago. The crop may be rated, I think, rather higher than an average one. Barley, in particular, is weighty, and of much better quality than laſt year's. Oats, not lodged by the rains, turned out a good crop. Peas have too much run to ſtraw, and are not well filled. Potatoes are plentiful, and of a fine quality. Turnips may be ſtated as a fair crop, though not ſo weighty as we have ſeen them ſome years. Many of thoſe firſt ſown appear to be unſound at the heart; but perhaps this is always the caſe with thoſe ſown too early in the ſeaſon. Wheat is ſcarce ever attempted to be raiſed here, the ſoil being of too light and looſe a contexture for raiſing that valuable grain.

'The ſheep markets have advanced conſiderably ſince laſt ſeaſon. Wool ſells about 5s. per ſtone above laſt year's price. Current price from 25s. to 31s. 6d. per ſtone. The fair eſtabliſhed at Langholm this ſeaſon for draught ewes on the 18th of September, was not ſo well attended as could have been wiſhed; owing perhaps to the heavy rains, about that period, preventing the farmers from having their ſheep aſſorted and brought forward to the market, and the too ſhort notice given to the Engliſh dealers. The prices of thoſe ſold were ſomewhat higher than laſt year's, being from 16s. to 18s. and 20s. a piece. There is a briſk demand for black cattle; and long prices are given for beaſts of good ſhape and ſize.'

Weſt Stirlingshire Quarterly Report.

DURING this quarter, the weather has varied from one extreme to another. The rains began about the end of July, and continued with little intermiſſion till the equinox, when the weather ſuddenly improved; ſince

ſince which we have had the moſt favourable ſeaſon ever remembered. The genial heat which prevailed favoured the ripening of the corns in the more elevated diſtricts; and the almoſt inceſſant rains in the beginning of harveſt, prevented for ſome time the corns in the lower diſtricts, though ready for the ſickle, from being cut down. As the crop was, from theſe cauſes, every where ripe at once, the demand for ſhearers to expedite the harveſt was uncommonly great, and the wages offered were ſo high, as to tempt the ſickly inmates of manufactories to ſhare the toilſome, though healthy, labours of the huſbandman. Harveſt was partially begun in the end of Auguſt, and was generally and favourably concluded by the middle of October.

Every kind of crop has proved uncommonly abundant. Bigg by itſelf, or blended with barley (the common practice in this diſtrict), has yielded more than an average crop. A great demand was raiſed, from the diſtilleries commencing their operations earlier this ſeaſon than formerly; and as laſt year's ſtock was exhauſted, whatever quantities of this year's produce were thraſhed, found a ready ſale at from 28s. to 35s. per boll in the ſmall diſtilleries in the northern parts of the county. Since harveſt has been finiſhed, the markets have been more abundantly ſupplied, and prices have rather begun to decline: but, as yet, there ſeems no reaſon to apprehend any rapid or conſiderable depreſſion. Oats, the ſtaple grain in this diſtrict, are the weightieſt crop, in point of corn and ſtraw, that has been remembered for many years. So completely, however, were the markets emptied of oat-meal before harveſt, that the produce of this year ſtill continues to ſell at the high price of 24s. per boll, and the meal at 1s. 7d. per peck. Potatoes, which, during the firſt two weeks of harveſt, were almoſt the only food of the manufacturing claſſes, are every where prolific and excellent. Turnips, now beginning to gain a footing, when well dunged and hoed, promiſe abundance of winter keep.

The produce of the dairy, being rather ſcanty this ſeaſon, fetches good prices. Butter, ſalted, ſells at 20s.; Common Cheeſe at 7s., and Sweet Milk Cheeſe at 10s., per ſtone, tron weight. Milch cows, from the deficiency of paſturage, occaſioned by the long and ſevere drought of ſummer, ſtill ſell at reduced prices. Black cattle, in all the recent markets, have met with a ready ſale; and fat cattle are gradually advancing in value; whence it ſeems reaſonable to conclude, that they will ſell at from 5 to 10 per cent. higher in the preſent, than in the preceding ſeaſon.——*Oct.* 24.

Letter from Upper Annandale, Oct. 25.

'The harveſt for ſown hay was excellent, and moſt of it was put up without any rain. It was otherwiſe with moſt of the meadow-hay, which was later than ordinary, and met with a good deal of wet weather in making it up. The early part of the harveſt for grain, ſeemed to threaten diſaſtrous effects; but the weather became fine before any ſerious damage was done, and has continued good ever ſince, with the exception of a day or two of rain. It was neceſſary to open out ſome of the earlieſt cut grains, and perhaps a part may have been hurried into ſtack too ſoon; but, in general, the crop has been ſafely got in, and bulks well.

'Thraſhed barley hardly anſwers the expectations formed of it when on the ground. Strong oats were laid down by the rains, and the grains are not very well filled; but ſuch as ſtood well, are better bodied. Potatoes are an abundant crop, of excellent quality, and finely got in. Peas were a decent crop, and not late, but ſuffered in cutting and drying. Wheat has anſwered well, and the extent of ground ſown is increaſing rapidly. Turnips are an equal and a good crop. Flax was never worſe in this country. Second clovers were abundant, and part of them has been made into hay, and got well up into ſtack, with layers of barley ſtraw, or without them. Markets for grain have declined a little; and thoſe for cattle have rather advanced of late. There is little demand for hay. Land rents, of all kinds of farms, are ſtill advancing.'

Selkirkſhire Quarterly Report.

The firſt three weeks of September proved very wet, eſpecially in the *head lands*; yet little damage was ſuſtained, as the weather, ever ſince, hath been extremely propitious for every ſpecies of labour; hence, harveſt work was got finiſhed in the beſt ſtyle poſſible; and a heavy crop, and fair price, ſeem to crown, with abundant ſucceſs, the labour of the huſbandman. Oats are a fine crop. Turnips look exceedingly well, and potatoes are plenty. Bear and barley are in a great meaſure ſupplanted by potato oats, which, on ſtrong land, are found to yield a great increaſe. The price of labour ſtill keeps high, and rather on the advance. The general run of day-labourers, through the ſummer, hath been from 2s. to 2s. 6d. Sheep and lambs have obtained a conſiderable advance on laſt year's prices; draught ewes are from 19s. to 20s. Hill paſture looks well, and ſheep are very good. The wool trade hath been briſk, and higher prices than ever known have been got.——*Oct.* 25.

Wigtonſhire Quarterly Report.

Of wheat, which is called the king of grains, little is ſown in this county. An idea prevails, that our climate is too moiſt, not only preventing the proper preparation of the ſoil, but alſo injuring the quality of the grain. This opinion may in time become antiquated, and furniſh another inſtance of the danger of haſty concluſions, when not founded on ſufficient experience.

The three firſt weeks of September gave us many broken days in the operations of harveſt, being inconſtant and ſhowery; but the weather becoming more favourable, all has been ſecured in good time. Perhaps few crops ever ſuſtained leſs injury during the harveſt ſeaſon than the preſent. In general, the bulk is greater than uſual; but the quality of the oats (and that is our chief dependence) is not equal to thoſe of the two laſt years. Such as have tried, ſay that the buſhel of oats weighs two or three pounds leſs this year than it did the laſt, and of courſe does not meal in proportion to what we hear of the eaſtern counties.

Little barley is raiſed in this county, big or bear being ſubſtituted for it, the latter variety being hitherto looked on as better adapted to our variable climate and imperfect culture. The ſowing of bear uſed to be pretty extenſive before 1803; but the crop of that year being al-

moſt unſaleable, for reaſons that have been publicly explained, potato oats have been extenſively ſown inſtead of it, this latter grain being deſervedly conſidered as a capital acquiſition. Laſt year's prices of bear having given a little encouragement, ſome good fields of this crop were viſible this year, and it is ſaid a few ſales have already been made at 50s. and 52s. 6d. per boll, of 12 buſhels Winchester.

Paſtures have kept good during the preſent quarter. Of fat cattle, few are to be found in this county, our diſtance from a certain market being very conſiderable. Young cattle, and lean ſtock, have not met with much fluctuation for ſome time; and though it cannot be ſaid that prices have advanced, buyers pretending a little ſhyneſs; yet farmers and graziers are not begun to ſhew diſpoſitions of lowering their demands.——*Oct.* 25.

Angusſhire Quarterly Report.

The dry weather of July was ſucceeded in the beginning of Auguſt by daily rains, which, though not very heavy, retarded the hay harveſt, and were rather unfriendly to that part of the crop intended for ſeed, as there was little, if any of it, got into proper preſervation when the rains ſet in. After ſeveral weeks of unſettled weather, an excellent harveſt ſeaſon was obtained, and the grain crops have proved ſo abundant, as may well excite and deſerve the gratitude of the owners. Barley is of excellent quality, but thought rather inferior to an average in ſome places. No rotting rains, nor ſhaking winds, nor blaſting mildews, &c.; but there is a talk of ſome black among the wheat; which, however, is not a ſtaple, but a ſubſidiary article. This grain has been cultivated, on a narrow ſcale, for ſome years back, with conſiderable advantage to the county; and ſome of the firſt ſown wheats of this harveſt, buſh and ſhow remarkably well. Froſt has hardly appeared till the morning of Friday the 4th inſt., when a heavy hoar froſt fell, with ice on ſhallow dubs ¼ inch thick: it did not return next day, but was followed by a conſiderable fall of rain on the 9th. On the whole, it may be ſaid of the harveſt, as was ſaid of a gallant 74 ſlipping into the water from the ſtocks;—it has gone off in a grand ſtyle; and, in the courſe of it, ſome ſpecimens of management have occurred, not unworthy the attention of the curious.

Markets, through the harveſt, have been rather dull than low-priced. At the Hill-Market of Kirriemuir, on Wedneſday laſt, a great ſpread of cattle, but no *far-off* dealers, and therefore little ſale, which is of the leſs conſequence, as farmers are well provided with winter food for keep.——*Oct.* 25.

Berwickſhire Quarterly Report.

Our harveſt has been favoured with a tract of moſt excellent weather. Reaping commenced about the 26th of Auguſt, being fully ten days earlier than appearances at the beginning of this quarter led us to expect; but, from the rapidity with which the corn came forward, a ſufficiency of hands could not be procured for cutting it down with requiſite deſpatch; yet, though we have ſeldom witneſſed ſuch a breadth of ripe corn at riſe, as our fields exhibited on the ſecond

week of September, there has been no material loſs from ſhaking. Moſt of the grain in the low diſtrict was carried by the firſt of October; and crops of every kind were probably never ſecured in better condition.

Reapers engaged for the whole harveſt, had from 2s. 2d. to 2s. 4d. per day with victuals; but, in the weekly market, the wages advanced with the increaſing demand, firſt to 2s. 8d., and the week following, to to 3s. per day.

Wheat is an abundant crop; and, if we except a few caſes, where over-luxuriance may have prevailed, the quality is good. Barley, which ſtill continues to be cultivated on a circumſcribed ſcale, is alſo good in quality, and may be reckoned an average crop per acre. Oats are a fine ſample, and meal well; but the produce will be rather middling; for though the bulk was great upon ſoft moiſt ſoils, there was a conſiderable deficiency upon the cold clays, and droughty gravels. The pea crop is good; and beans are rather above mediocrity.

Turnips have been nearly at a ſtand for theſe two months paſt, and are much infected with mildew in conſequence of the intenſe drought; yet, from the extended breadth of ground which they occupy, and the general fulneſs of plants, their aggregate weight may probably fall little ſhort of a medium crop.

Draught ewes have ſold from 14 to 20 per cent. above the rates of laſt year; but there has been little demand for ſtore cattle ſince the commencement of this quarter. Fat markets have remained pretty ſteady.

The potato crop, which is about half gathered, proves very prolific, and fine in quality. Young clovers have but a diminutive aſpect; and paſtures have done very little ſince Lammas.

New wheat ſold for a few weeks as high as 53s. and 54s.; but declined with the fall in the London market. Prices at Berwick, October 19th—Wheat 42s. to 45s.; Barley 28s. to 29s.; and Oats 21s. to 24s. per boll of ſix buſhels.——*Oct.* 26.

Dumfriesſhire Quarterly Report.

The laſt ſummer, throughout, promiſed abundance of farm produce, and, now that the harveſt is concluded, there appears to be little diſappointment. The hay, for the firſt crop, was rather better than an average; and, where ſecond crops have been taken, they have been well got. Muirland, or bog hay, has not been weighty, nor equal to our ordinary growth.

Corns of all kinds appear to have been well filled; yet, when ſtacked, do not ſeem to give more than ordinary bulk. Thoſe not cut early in September, were much broken down by heavy falls of rain, attended with high winds, which ſeemed to have in ſome degree prematurely ripened the grain. The wheat and barleys which were cut early, ſuſtained ſome loſs by the rainy and cloſe weather in the beginning of September, but not to any conſiderable extent. After the middle of the month, the weather became dry, and continued ſo till the harveſt was concluded in the moſt ſatisfactory manner. So far, however, as wheat and barley have been thraſhed, they appear to be no more than

an ordinary crop; and oats may be conſidered in the ſame light. Turnips are inferior to laſt year's growth, but cannot be called a bad crop. Potatoes are abundant, and of good quality, and are now all ſtored; and a very general ſowing of wheat has begun upon the potato land. How far this will prove advantageous to the farmer in the end, is very doubtful. It would ſeem to be more than the light lands of Dumfrieſhire can well bear; yet the preſent return is ſo great a temptation, that the practice will probably continue, at leaſt, for ſome time. No other occupation of the ground, for two years, once laboured and manured, is known to give ſo high a return as potatoes and wheat. In many ſituations, of late years, the value of theſe two crops have far exceeded that of the ground-right of the land.

Cattle of all kinds improved well through the ſummer and harveſt months, yet have left the farmer but a very moderate return for the year's keeping, and not ſo much in general as he would require in the preſent times of high rents, and exceſſive expence of management. Cattle are no doubt leſs ſubject to this laſt than corn; yet, in the now improved manner of keeping cattle upon green crops and laid down paſtures, a conſiderable part of the expence of farm management muſt juſtly be laid upon them; and, in that view, it is not the yearly return of former times that will pay for them. In general, it is reckoned that the cattle farmers of this county have, for the laſt year, been ſcrimply indemnified for their outgivings. The ſheep farmer has been better paid. The increaſe in the price of wool has done much for him; and even the carcaſe has ſold at an advanced price, when that of the bullock did not exceed the rate of laſt year. This is not very accountable, as the ſame run of good ſeaſons, which have ſo much multiplied the quantity of animal food over all the kingdom, muſt have done ſo ſtill more as to ſheep than cattle.——*Oct.* 26.

Aberdeenſhire Quarterly Report.

After the date of laſt report, the rains ſet in ſo heavy, and continued, with ſhort intervals, ſo long, that great fears were entertained for the ſafety of the crop. About the 10th of September, the rains went off, and dry weather ſucceeded; which has continued, with little more than the interval of one week, ever ſince. The harveſt, therefore, which was retarded a little in the beginning, has exceeded our moſt ſanguine expectations in deſpatch and celerity. The whole is cut down, and moſtly ingathered, in the beſt order; and the bulk in the ſtack-yards is uncommonly great. The peas are ſmall grain; and bear, on the whole, will be rather inferior to the growth of the laſt two years. Both potatoes and turnips are abundant crops. The demand for cattle has been moderately quick, and prices have been much the ſame as laſt year.

Improvements go on here with the ſame ſpirit and vigour as for many years paſt. Small patches of wheat are beginning to be cultivated more generally than formerly; but an inſuperable bar to the extenſion of the culture of this grain to any extent in this county, is the great proportion of bad land to good, upon almoſt every farm. From this cauſe, it is impoſſible, by all the ingenuity of man, to find manure to extend the wheat culture widely, without injuring, or totally neglecting, the inferior ſoils, which, by diminiſhing the quantity of paſture graſs, and

curtailing the maintenance of ſtock, would give a ſevere wound to one of the firſt objects of improvement in this diſtrict.——*Oct.* 28.

Roſſſhire Quarterly Report.

SINCE laſt report, we have had a continuation of changeable weather, which has never gone to extremes of either very bad or very good; at the ſame time, was unfavourable, during ſo important a part of the ſeaſon. The harveſt has of courſe been tedious, and attended with many of the diſagreeable circumſtances of a late ſeaſon. In the months of Auguſt and September, we had much wet weather, with little ſunſhine, which, being the ripening ſeaſon with us, has rendered the quality of all grains inferior to that of laſt year's, and probably will leſſen the quantity of marketable produce conſiderably. The chaff of the wheats, during the ſoft weather in Auguſt, was thickly covered with a dark-coloured gum; and the ears being likewiſe attacked with the red ruſt, the quality of that grain is reduced much below mediocrity. I do not ſuppoſe oats and barley have ſuffered ſo much; but theſe cannot be expected to be ſo fair in colour as laſt year's crop. The greateſt recommendation for the marketing of our crop is, that the wheat is almoſt entirely free of ſmut. The whole crop is alſo free of ſprouting; and I have not heard of any ſtacks being turned for heating. There is ſtill ſome corn in the fields. Potatoes are an abundant crop, of good quality, and are juſt now getting out of the ground. Turnips made great progreſs during the month of Auguſt, and are uniformly a good crop, where the land was well prepared, and the culture of them properly attended to. That, however, can only be ſaid of about one half of the turnips attempted to be raiſed in this county. Several fields of wheat have been got ſown in excellent order. The cattle trade has been dull during the quarter. At Beauly Michaelmas market, there was a larger ſhow than uſual: A good many were ſold, but at a reduction of price from what was given in the month of July. As yet, there is nothing doing in the corn trade; ſo cannot report any thing on that head.——*Oct.* 28.

Letter from Glaſgow, 29th October.

'THE weather, at the beginning of harveſt, was very unfavourable, which tended conſiderably to raiſe our corn markets; but having ſince continued good, our different crops were ſecured in the fineſt condition, which, with the large importation of wheat, has lowered the price of that grain to the annexed quotation.

'Our wheat crop is very abundant, but rather inferior to laſt year's. Oats are turning out very indifferently, not mealing nearly ſo well as laſt crop. Barley is coarſe and *lold in the hand*, though there was but little ſown laſt ſeaſon in this neighbourhood. We have a great crop of potatoes, and the quality excellent.

'Our ſupply of grain has been chiefly from London and Newcaſtle, and conſiſts moſtly of foreign wheat, the quantity, we ſuppoſe, not leſs than 10,000 bolls; but, as the importation of oats, beans, &c. has of late been but trifling, our market is at preſent bare of every kind of grain, wheat excepted; but as it is believed that exportation will be allowable from Ireland by the 10th of next month, a free ſupply of oats

may ſhortly be looked for from that quarter. Barley may be expected, as uſual, from England and the north of Scotland, in conſiderable quantities.

'State of Glaſgow Markets, October 29.

Dantzic Wheat	40s. to 42s.	per boll Linlithgowſhire meaſure.
Scotch ditto (old)	42s. — 46s.	
——— ditto (new)	34s. — 42s.	
——— Barley, ditto	30s. — 34s.	per boll Stirlingſhire meaſure.
Engliſh ditto, ditto	35s. — 37s.	
Scotch Beans (old)	24s. — 27s.	
——— Peas, ditto	22s. — 23s.	
——— Oats, ditto	22s. — 24s.	
Engliſh ditto (new)	24s. — 28s.	
Iriſh ditto (old)	25s. — 26s.	per 264 lib.
New Oat Meal	23s. — 24s.	per 140 ditto.
Old ditto, ditto	22s. — 23s.	ditto, ditto.'

ENGLAND.

Norfolk Quarterly Report.

THIS diſtrict has been favoured with a more abundant crop than perhaps the oldeſt agriculturiſt remembers; and the quality of the grain is better than a large bulk of ſtraw uſually produces. Wheats will average about 60 lib. per Wincheſter buſhel, and barleys a proportional weight. The harveſt, owing to the backward ripening of the corn, and the vaſt number of loads to be carried, was extended to an unuſual length, yet has been finiſhed in a ſuperior ſtyle. A good deal of the early carried grain proves to be damp, and muſt be kept in the barn or ſtack till the ſpring months; though what was houſed in the latter part of autumn, when the weather was favourable, is in excellent condition, and fit for any market. Preſent prices are—Wheat, 60s. to 64s.; Barley, 30s. to 32s.; Oats, 24s. to 28s.; Grey Peas, 36s. to 38s.; all per quarter of eight Wincheſter buſhels.

The turnip crop, which, after the firſt and ſecond hoeings, wore a moſt promiſing appearance, has of late ſuffered every where from the ſeverity of the drought, and, in many inſtances, from the *black canker*. The crop of vetches, both of the winter and ſummer ſpecies, proved excellent; and artificial graſſes have planted in a moſt luxuriant manner. Wheat ſeed is only partially begun; but the late fine rains will now allow the immediate breaking up of the *ollands* (*vide* Mr Young's Survey), and the work will go briſkly forward. Wool and Stock lambs have obtained great prices, as have all kinds of good ſtock, at the late fairs.——*Oct.* 21.

Letter from a Yorkſhire Farmer, October 21.

'I HAVE the pleaſure to inform you, that our harveſt is completed in the moſt favourable manner, and that every deſcription of grain is properly ſecured. Our wheats are the beſt ever experienced, both in quantity and quality, yielding abundantly under the flail. Barleys are much inferior in quality to laſt year, being in general coarſer in the ſkin, and lighter; but the quantity in meaſure will amount to a full

crop. Beans are alſo good, well podded, and finely cured. The Oats is the worſt crop; but not much of this grain has been thraſhed: what I have ſeen, are not fine, nor ſo full of meal, as the produce of 1804. Potatoes are an abundant crop, and the quality ſuperior to any former period. Turnips have ſuffered much by the dry ſeaſon; many fields, and *patches* in moſt fields, being at this time in a dying ſtate, and cannot ſtand the winter. The diſeaſe is at the root, and thought to be produced by a grub, or worm; but, in examining them, I find nothing but ſpecks and cracks where they begin to decay; and when the froſt ſets in, all thoſe ſo affected muſt rot. This will make a material difference in the quantity of this moſt neceſſary and uſeful winter food, which, in Auguſt, was thought to be the moſt promiſing ever known. The ſeaſon ſtill continues ſo very dry, that many farmers have not yet ſown any wheat, the high lands being conſidered in too dry a ſtate; and much of the ſtrong corn ſtubbles cannot be ploughed. Our markets are upon the decline for every kind of grain. The new wheats are ſo very fine, that the old ſtale grain is totally unſaleable; and our importers having conſiderable quantities on hand, will ſuffer a heavy loſs.'

Letter from a Gentleman in Wiltſhire, 24th October.

'The harveſt, though it began late, was finiſhed as early as uſual. The greater part was ſecured by the 10th October, and ſtill earlier in Dorſetſhire, Somerſetſhire, and the ſouthern coaſt of Devon; and the crop has turned out fully as good as was expected. The wheat harveſt began nearly at the ſame time, not only in the weſtern counties, but in a very conſiderable part of the kingdom; but, unfortunately, the weather was very untoward for the firſt fortnight, though ſeldom two days were wet together. The conſequence was, that a very conſiderable proportion of the wheat was carried in ſo damp a ſtate, that a great deal of it will not be fit for uſe till March. Luckily, however, the rains were of infinite ſervice in preventing the blight, with which the air was heavily loaded, from doing any ſerious injury.

'As ſo much of the wheat cannot be thraſhed, and the demand for ſeed has been urgent, the markets have been thin, and the prices have kept up. The demand for good wheat has alſo been great among the millers, who had bought inferior corn, and wanted good new wheat to mix with it; and they found their advantage, in the price not being too much reduced.

'The barley crop was much beyond an average, and in general well houſed; but very little of it has been thraſhed as yet; and as the maltſters, who have ſtocks of old malt, have no intereſt in reducing the price, it ſtill continues high. The great quantity of after-graſs, and the favourableneſs of the weather to eat it, have made it unneceſſary to ſend cattle to the ſtraw-yards. There has conſequently been as yet no urgency for thraſhing barley for the ſake of fodder. The demand for malt is likely, however, to be very great, as the ſtocks of beer are low, and much barley will be wanted.

'It ſeems therefore probable, that the ſupply either of wheat or barley will not be much greater than the demand for ſome weeks to come, and, of courſe, that the prices, notwithſtanding the great crops of both, will not ſink very rapidly.

'The crop of oats, in the weſtern and midland counties, has been generally bad. The price is already conſiderably advanced, and ſtill more likely to be higher than lower.

'Beans have turned out much better than was expected, and are, upon the whole, a fair average crop.'

'Store ſheep and lambs have ſold rather higher than laſt year, in conſequence of the general proſpect of winter food. The hay crop, indeed, was not great; but the after-graſs has not been ſo abundant, nor ſo healthy, for many years. Some of the early turnips are gone off; but thoſe intended for ſpring feed, both Engliſh and Swediſh, are good and abundant.

'Fat cattle, notwithſtanding the dearneſs of lean ſtock, have advanced very little in price.

'The quantity of cheeſe made in the laſt year has been conſiderably above an average, and prices are on the decline.

'On the whole, the year 1805, notwithſtanding the blights that prevailed during the ſpring and ſummer months, and the untoward ſtate of the weather during the hay and wheat harveſt, has been the moſt abundant in corn and graſs of any ſince the year 1794. Even the heavy rains of July, which threatened ruin to the wheat, were the ſalvation of the crop, and materially improved the barley, oats, and beans.

'Prices of grain at Warminſter, Saturday, October 19.

Wheat - - - -	64s. to 90s.	Oats - - - - -	32s. to 34s.
Barley - - - -	43s. — 51s.	Beans - - - - -	62s. — 64s.

Oct. 24.

Letter from Lincolnſhire, Oct. 24.

'Our Lincolnſhire crops are very good, and the markets are rather falling; very little or no mildew is on wheat, but all that variety of grain is very good, and the weight about 62 lib. per buſhel.

'Land rent is getting very high in general, except what belongs to large proprietors, who make it a rule to have their eſtates valued only once in each generation, which is the caſe with my two employers, Lord Forteſcue and Sir Joſeph Banks. The latter thinks very much of your publication, and ſays it is the beſt he ever met with on practical agriculture. One reaſon of the rents being raiſed ſo much, is the great prices given for our fen-land; at the laſt ſale of which, this week, ſome of it went to 53l. or 60l. per acre.

'Our corn crops, in general, are very large, and are well harveſted.

	Wheat.	Barley.	Oats.	Rye about
Prices at Louth,	60s. to 72s.	36s. to 42s.	21s. to 25s.	60s. to 64s.
Lincoln,	70s. to 84s.	42s. to 44s.	22s. to 26s.	— —

'Theſe two markets are at the extremes of the county, and ſo may furniſh an average of the whole. The London markets for Beef and Mutton being lower than laſt year, of courſe Lean Cattle ſell at leſs price; Beef here from 6s. to 7s. per ſtone of 14 lib., Mutton 6d. and 7d. per lib.

'His Majeſty's ſale of Spaniſh ſheep, which Sir Joſeph Banks has the direction of, nearly half Rams, and half Ewes, brought 30l. 4s. on an average; the higheſt priced Rams 58l. and 67l. each. The number was 38, and raiſed 1148l. 4s.; they are of the Merino breed.

'Wages are getting very high with us; in harveſt, 24s. per week was paid to a labourer with all his victuals; and, in ſome caſes, they were higher.'

Letter from a Farmer in Wales, Oct. 24.

'In this quarter, the corn was all in by the 20th of September; and the harveſt ended better than we at one time expected, having, in the middle of it, had a fortnight of very unſettled weather, when ſome of the barley was diſcoloured; but, as the air was cool, it ſuſtained no other damage; and moſt of the wheat was got in before the rain. I have often ſeen a greater bulk of ſtraw; but the quality of the grain is good. The wheat yields well, and holds its weight; and what oats I have ſeen for ſale are good. Peas and Beans had the appearance of a great increaſe; but I have not heard of any being thraſhed as yet. On the whole, we may ſay we have a ſaving crop. One thing, however, muſt be noticed, we have no old ſtock on hand, and were obliged to fall on the new as ſoon as it could be got into the barn; therefore, Wheat ſtill keeps up in price, but, as ſoon as we have done ſowing, we look for a drop. Seed wheat is now as high as 35s. and 36s. our buſhel, or about 14s. 3d. the Wincheſter buſhel; and our millers are giving from 30s. to 34s. for 168 pounds, and the maltſters from 40s. to 42s. per quarter for barley. Turnips are a good crop wherever they have been properly hoed; they ſeem to gain ground faſt in this part, there being a greater breadth of land under this root than ever witneſſed before. Potatoes are in great plenty. We have had but little demand of late for cattle, yet the price keeps up. The rains, in harveſt, brought on a great fluſh of graſs, which ſtill holds good; and the weather of late has been very favourable. We never had a finer ſeed-time; and there will be a great breadth of wheat ſown this year, if it holds for a week or nine days longer.'

Letter from a Gentleman in Eſſex, Oct. 25.

'We have not, this Michaelmas quarter, the unpleaſant taſk of reverberating in your ears, the blight of corn and failure of crops; but, ſo favourably has Providence ſmiled upon us in regard to the moſt important grain, that our barns are once more filled with plenty. But it muſt not be thought the farmer is now diſincumbered, and placed in a ſtate of eaſe and independence. No! Never was money more ſcarce amongſt the generality of them; for, what with high rents, taxes of every deſcription, and, above all, the general blight of laſt year, it is with the greateſt difficulty many are able to pay their rents, tythes, rates and taxes; and ſome are totally unable.

'Our harveſt, upon the whole, was favourable for houſing the grain, the latter part much the fineſt; and thoſe who, fearing ſeed-time and harveſt might fail, cut it in that green ſtate, which is not only injurious to the corn, but much retards the thraſhing, as the ſtraw and grain are in great diſtreſs. Some have paid as high as 9s. per quarter for thraſhing wheat, where labour is in the barn about 2s. *per diem*. The average weight is about 58 lib. per buſhel, Wincheſter meaſure. Oats, Peas, and Beans, were generally good. Barley will be much *mow-burnt*, owing to the hurry in which it was carted. Hops are the worſt crop almoſt ever known. The duty has, in years of plenty, ariſen to 200,000l.

This year, it is computed at about 25,000l. Many growers never picked a hop. Lean ſtock keep up their price, owing to the plenty of feed. Store Ewes are dear. Pigs rather cheaper. Fat cattle are moderate in price; for the want of money is the general complaint. Our markets for grain are much the ſame as thoſe of Marklane.'

Yorkſhire Quarterly Report.

THE harveſting buſineſs of the preſent autumn has had, in the main, every advantage which could be derived from a moſt favourable ſtate of the weather, in ſecuring one of the beſt crops of Wheat and Barley that has been known for many years. Yet much grain has been ſtacked in rather too damp a condition, from the diſtruſt, occaſioned by the precarioufneſs of the more early period of the harveſt.

It appears that Oats and Beans are not ſo good as laſt year; yet not much inferior to a fair average product. From the apparent backwardneſs of the grain during the ſummer, many preſages were made of an uncommonly *late* harveſt: the event has been favourable in that reſpect; ſo much ſo, that even in the moſt bleak ſituations, moor farms, &c. Oats, and other produce, have been generally well ſaved.

Potatoes are a bountiful crop, and ſelling low. Beſt Wheat 10s. 6d.; Barley 6s.; Oats 4s.; Beans 7s.; Rye 6s. per buſhel of Winchester.

Fruit of all ſorts has been ſcarce—much injured by the May froſts; and the little that eſcaped that inevitable ſcourge, has been devoured by myriads of waſps, which ſwarmed in all quarters like one of the plagues of Egypt. Even apples are ſcarce and dear, yet ſome orchards yielded well.

The ſummer fallows have generally been well prepared; indeed, any inſtance to the contrary, would have been a moſt culpable neglect, under ſuch favourable circumſtances. Turnips promiſed to be a full crop till of late, when ſome appearance of injury at the root from grubs, worms, &c. together with the want of the neceſſary ſupply of rain during the autumn, have cauſed ſuch a reverſe, that perhaps leſs than half the uſual food for cattle and ſheep can only be derived from them. The prices, of courſe, vary from 1l. to 5l. per acre, to be eaten on the ſoil by ſheep.

The wheat ſowing is unuſually protracted; many cultivators think it neceſſary to wait for rain, even for their fallows; and the clover leas are too hard for the plough: very little, indeed, has been ſown; but, as rain is now coming on, they will probably ſoon be buſy.

The young clovers and ſeeds have a good appearance. The aftergraſs on the meadows is not plentiful; clover ſeed is not expected to be good or abundant.

Lean Cattle, Sheep, and Pigs, are ſelling at good prices. The demand for fat cattle is rather ſlack. Hay 4l. per ton; Beef, Pork, and Veal, 7d. per lb.; Mutton 6d.; Butter 1s. 4d. Avoirdupois.

Taxes, wages of labour, and every ſpecies of outpayment, from the corn farmers, 'have increaſed, are increaſing, and ought to be diminiſhed!' The heavy and impolitic impoſts upon malt in particular, have created a curſed and unwholeſome beverage of a ſort of *ſoi-diſant* beer, ale, or porter, more properly hogs' waſh, made of any thing but malt and hops; by which all the hardworking farmers, and good people of England, in general, are in danger of being *poiſoned*.

Letter from a Gentleman near Canterbury, Oct. 27.

'Our harveſt commenced *backward*, but, from the very fine weather afterwards experienced, was got up in moſt excellent order, where proper field room was allowed; and I am happy in ſaying, we reaped moſt excellent crops of all kinds. From the quantity of rain we have had ſince Old Michaelmas, our wheats, on ſound lands, will go on well; but little is yet ſown, as we ſeldom begin till about this time, from the change of ſervants, &c. that, with us, takes place at this quarter; and, indeed, from this time till the middle of November, is here called the beſt ſeaſon; as earlier ſown, on good lands and in heart, is apt to be winter proud. Our markets are as under:

'Wheat 60s. to 76s.; Rye 36s. to 40s.; Barley 36s. to 38s.; Oats 28s. to 35s.; Beans 48s. to 52s.; Tick do. 52s. to 55s.'

Northumberland Quarterly Report.

Since laſt report, the weather has been uncommonly favourable; and the harveſt, which was expected to be late, proved earlier than generally happens. Every ſpecies of corn was nearly ripe about the ſame time, which cauſed the work to be hurried; but the fine weather continuing through September, without any high winds or rain, no evil was ſuſtained, and the crop was got in with little more trouble and expence than the firſt reaping, and never in dryer or better condition. The ſummer fallows were well wrought, the fine rains, about the middle of October, having put them in excellent condition for the ſeed; the wheats ſown on them, as well as on the bean ſtubbles, were never depoſited in better tilth.

Though the weather has been ſo favourable for harveſt work, and wheat ſowing, it has been detrimental to the turnip crop, upon dry lands; and a greater extent of turnips and ruta baga, upon thoſe ſoils, was never known, in no ſeaſon, to have ſuffered ſo much from mildew as the preſent one. On the ſtrong loams they are not ſo much affected; but the cabbages, upon thoſe ſoils, have ſuffered, and are much ſtinted in their growth.

The wheat crop is, on almoſt every ſpecies of ſoil, exceedingly bulky; and ſome ſamples of autumn ſown wheat are very good; but ſeveral crops were infected by the ruſt on the ſtraw, eſpecially the ſpring ſown ones, which has made the grain ſmall and ſhrivelled. In the county of Durham, this diſeaſe has been more general than here; and ſeveral of the ſamples are alſo unſound; but, notwithſtanding theſe deficiencies, the wheat crop may be fairly eſtimated at a full average. Of other kinds of grain, oats are in general good, and may be taken at an average; barley ſomething under.

Turnips, in the beginning of Auguſt, had the appearance of being uncommonly good; but having been attacked in ſo extenſive a manner by the mildew, a leſs produce will be got than what was expected. The preſent prices are from 6l. to 7l. an acre, to be eaten with ſheep.

The prices of cattle remain much the ſame; but ſheep have advanced ſince laſt year. Draught ewes of the long-wooled kind, were ſold, at St Ninian's fair, for 5s. or 6s. a head more than laſt year.——*Oct.* 29.

Letter from London, Oct. 29.

'In my laſt, I had to adviſe you of a recent advance in moſt articles of grain; but in the courſe of three weeks from that time, prices experienced a conſiderable declenſion, owing to the general good accounts of the growing crops, and the appearance of favourable weather for the harveſt. The bulk of wheat on the ground was conſiderable; and the produce, ſo far as it has been hitherto tried, is good; the grain being of fine plump quality. The only new Engliſh wheat, of any conſequence, yet produced, has been from Kent and Eſſex; the weight of which, on an average, may be conſidered 60 lib. per buſhel, and fine ſamples 62 lib.

'With regard to the general crop of wheat in England, opinions ſeem at variance; but from the beſt information I have been able to procure on the ſubject, it may be conſidered as a full average crop. If we may be allowed to judge from the partial ſample yet produced at market, which is generally of fine quality, it does not appear that the mildewed wheats of laſt ſeaſon, *if they were uſed as ſeed*, have had any bad effects on the produce.

'The quantity of foreign wheat now in our granaries is conſiderable. Still, it is probable, the quantity will not prove too much for the demand, as the new wheats, for ſome months to come, will require a mixture of old. Indeed, though new Engliſh wheats were yeſterday rather lower, the freſh, ſound, foreign wheats, obtained more money. The quantity of ordinary foreign wheats, however, which muſt keep hanging on the market, will cauſe other inferior wheats to be ſold at low prices. It is likely that the price of wheat may not be lower for the preſent; but when our ſupply becomes general and plentiful, a depreſſion in value may be looked for. Still, as it is exportable when the average is under 66s. per quarter, that conſideration may prevent any continuation of low prices. From the quality of Engliſh wheats being fine this ſeaſon, it will behove the ſhippers of wheat from Scotland to this market, to be particularly attentive to its condition, or they will be diſappointed in their expectation of price.

'The quality of barley is coarſe, and fine ſamples are bringing high prices; but ſuch prices can only be maintained while the preſent ſmall ſupply continues. The only new oats of Engliſh growth, of any conſequence, yet come to market, have been from Lincolnſhire; and theſe certainly do not give us a favourable opinion of the quality of their growth, though the importations from Scotland have in general been of good quality. Our arrivals of oats laſt week were large for ſo early a period of the ſeaſon, and prices declined; but the demand being conſiderable, and having none but our home ſupplies, (the Pruſſian ports being ſhut for exportation), prices are already become briſker.

'New beans are ſoft, and but an ordinary ſample. Peas are in general good; but the ſupply of either has hitherto been ſmall. The crop of potatoes is reckoned a large one, and prices expected low. Eſſex and Kent wheats brought yeſterday 75s. and 77s. per quarter.

OBITU-

OBITUARY.

Died at Edinburgh, on 18th October, Mr WILLIAM MACKIE, farmer, Ormiſton.

Mr Mackie was well known in the rural and political world; and, poſſeſſing extenſive abilities, diſtinguiſhed himſelf conſiderably by his different Economical treatiſes. He edited Dirom's work on the Corn Laws, to which ſupplementary letters were annexed, well calculated to ſhew the importance of the trade, and which gained him great applauſe. He alſo wrote ſome pamphlets on the Diſtillery and Malt Laws; and few people in Scotland were better acquainted with the ſeveral meaſures of capacity uſed in different counties, whether ſtatutory or cuſtomary. None reſiſted the attempts of the municipalities to increaſe theſe meaſures, with greater keenneſs, than Mr Mackie. Indeed, few were more able to do it; becauſe none had ſtudied the ſubject with greater attention. The writer of this article was intimately acquainted with him for many years; and, while he laments his death, cannot ſuffer it to be recorded in this publication, without offering a mite of reſpect to his memory.

NOTICES TO CORRESPONDENTS.

THE ſecond eſſay *on the Endurance of Leaſes*, from the Eddleſtone Club, will be preſented in next Number.

An eſſay, which has for its diſtinguiſhing motto, *The beſt Animal on a Farm is a Good Wife;* together with a letter on *Flax Huſbandry*, from Dungannon in Ireland, ſhall alſo be preſented.

We are obliged to the gentleman who has tranſmitted ſome remarks on the Survey of Norfolk by Mr Young, and will likely make uſe of them, when that work is reviewed.

The *Banffſhire Ploughman* ſhall be gratified as early as poſſible.

Sir George Stewart Mackenzie's *Reply to Mr Headrick and A. S.* will find a place; and with this, the diſpute on the analyſis of lime ſhall be concluded.

The Quarterly Reports from Mid-Lothian, Moray, Tweeddale, and Inverneſs, came too late.

Various other papers are received, which we have not time to notice; but each of them ſhall be attended to in courſe.

No. XXV. will be publiſhed on Monday, 10th February 1806.

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END OF VOLUME SIXTH.

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